RECLAMATION

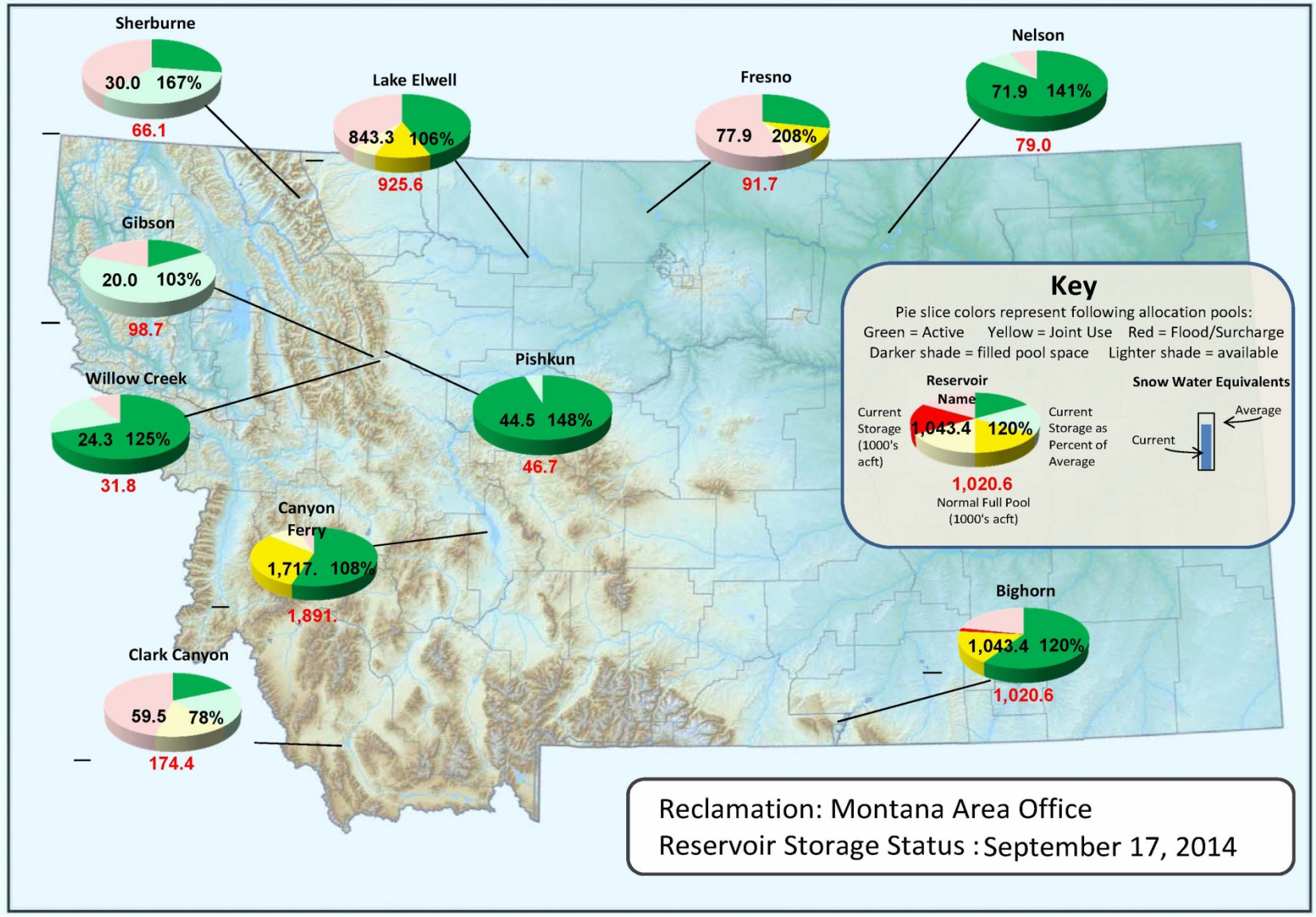
Managing Water in the West

Governor's Drought and Water Supply Advisory Meeting

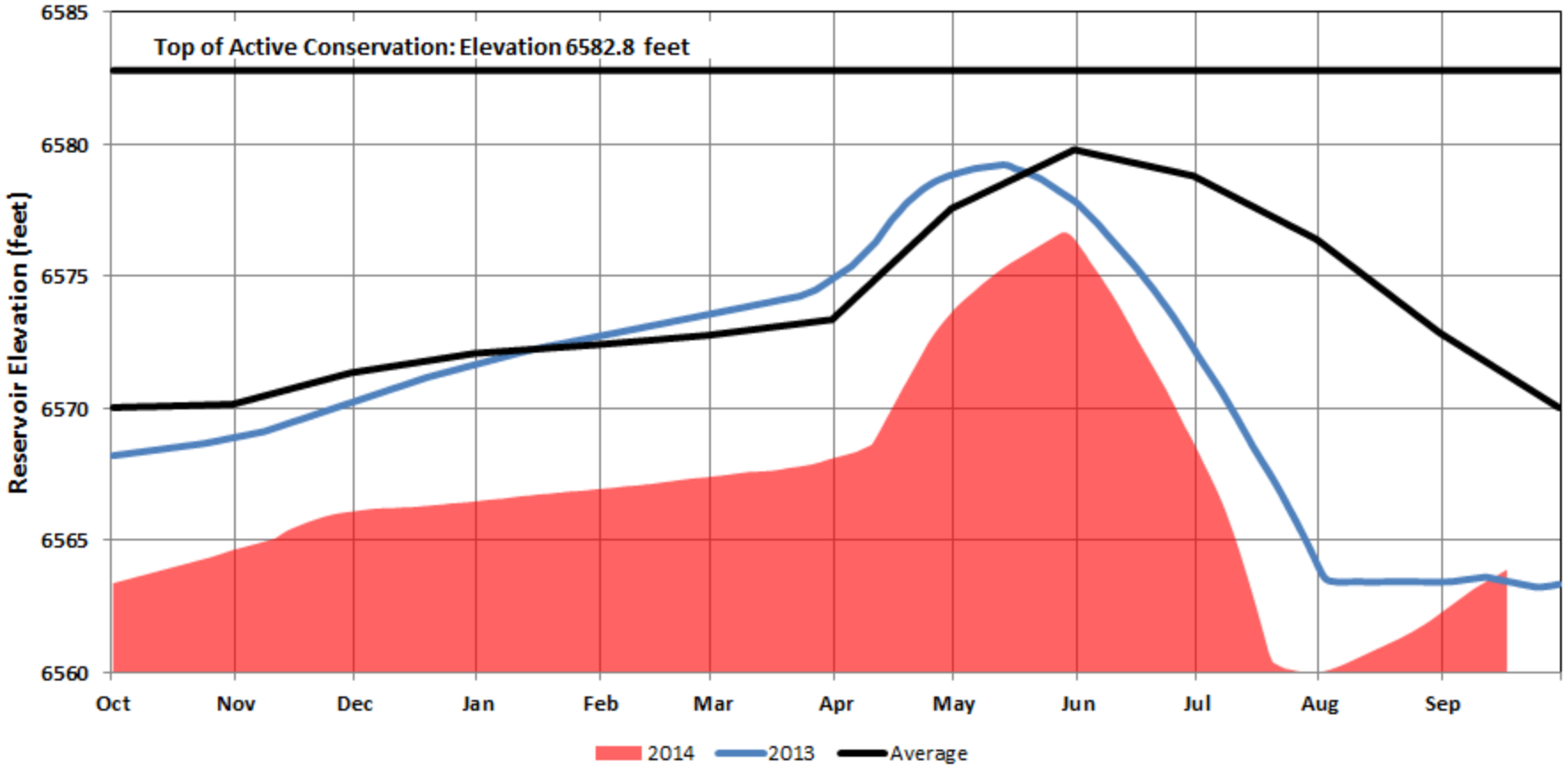
RESERVOIR AND RIVER OPERATIONS
Montana Area Office
Billings

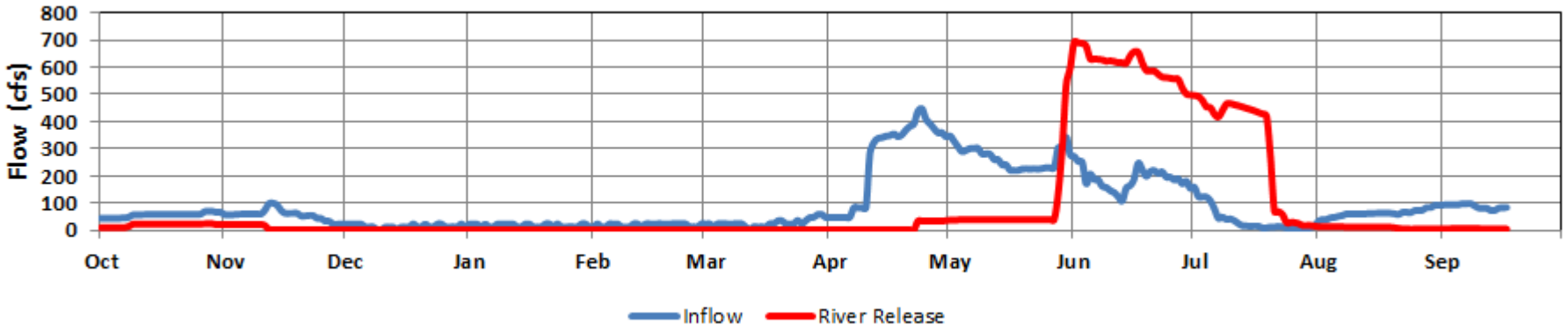
September 18, 2014

U.S. Department of the Interior
Bureau of Reclamation

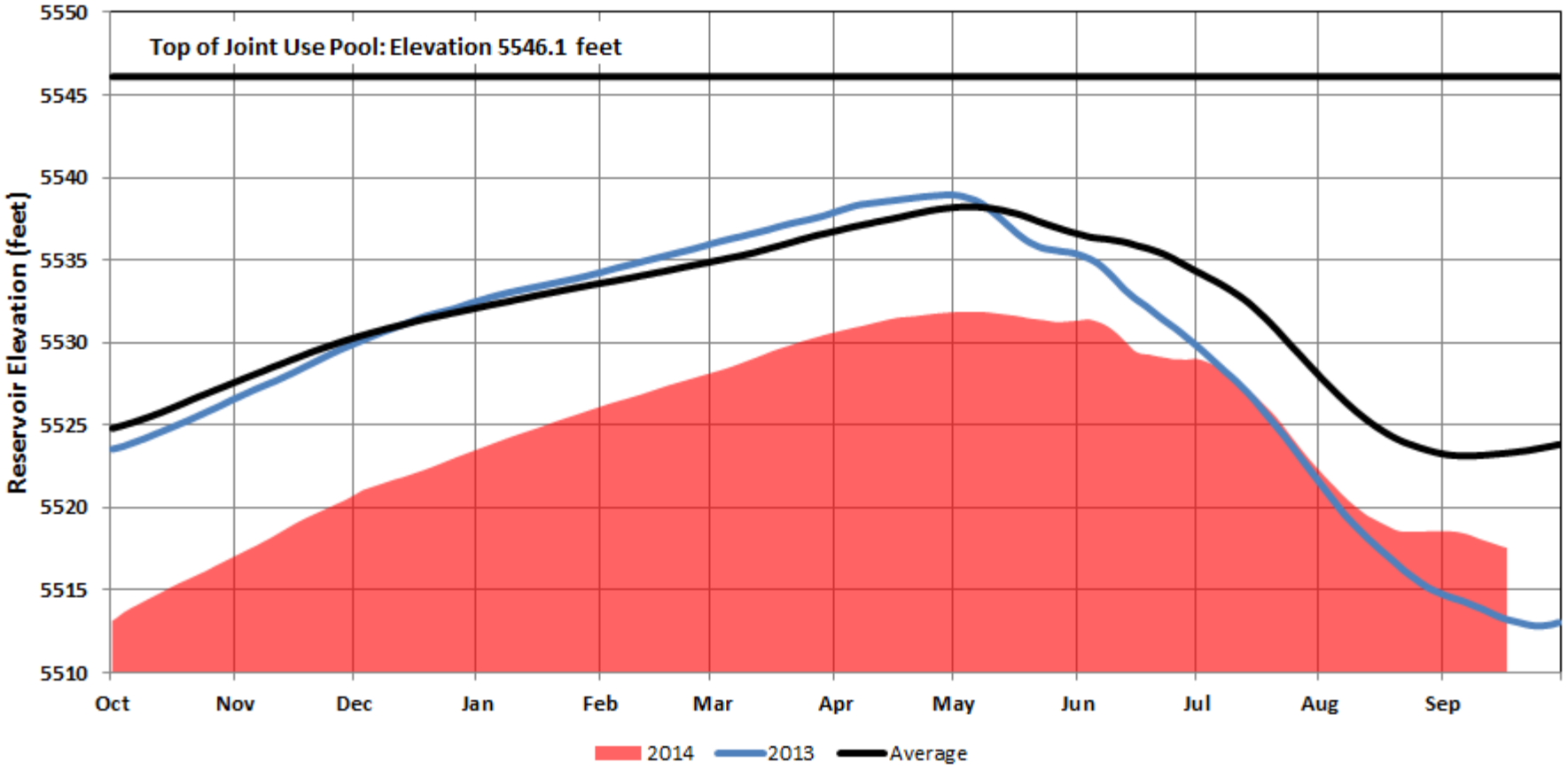

Sherburne
30.0 167%
66.1
Lake Elwell
843.3 106%
925.6
Fresno
77.9 208%
91.7
Nelson
71.9 141%
79.0
Gibson
20.0 103%
98.7
Pishkun
44.5 148%
46.7
Willow Creek
24.3 125%
31.8
Canyon Ferry
1,717. 108%
1,891.
Clark Canyon
59.5 78%
174.4
Bighorn
1,043.4 120%
1,020.6
Key
Pie slice colors represent following allocation pools:
Green = Active Yellow = Joint Use Red = Flood/Surcharge
Darker shade = filled pool space Lighter shade = available
Reservoir Name
Current Storage (1000's acft)
1,043.4 120%
Current Storage as Percent of Average
1,020.6
Normal Full Pool (1000's acft)
Snow Water Equivalents
Average
Current
Reclamation: Montana Area Office
Reservoir Storage Status : September 17, 2014

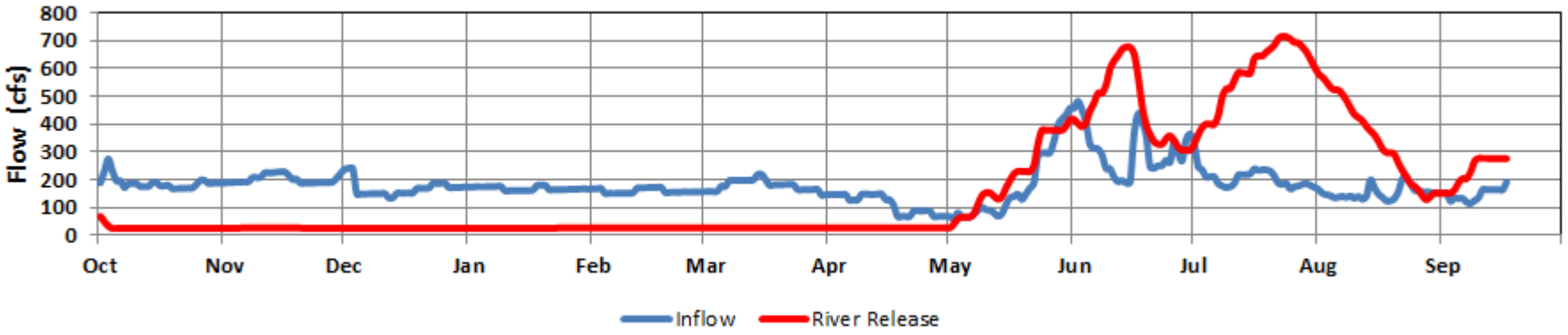
Lima Reservoir Operations



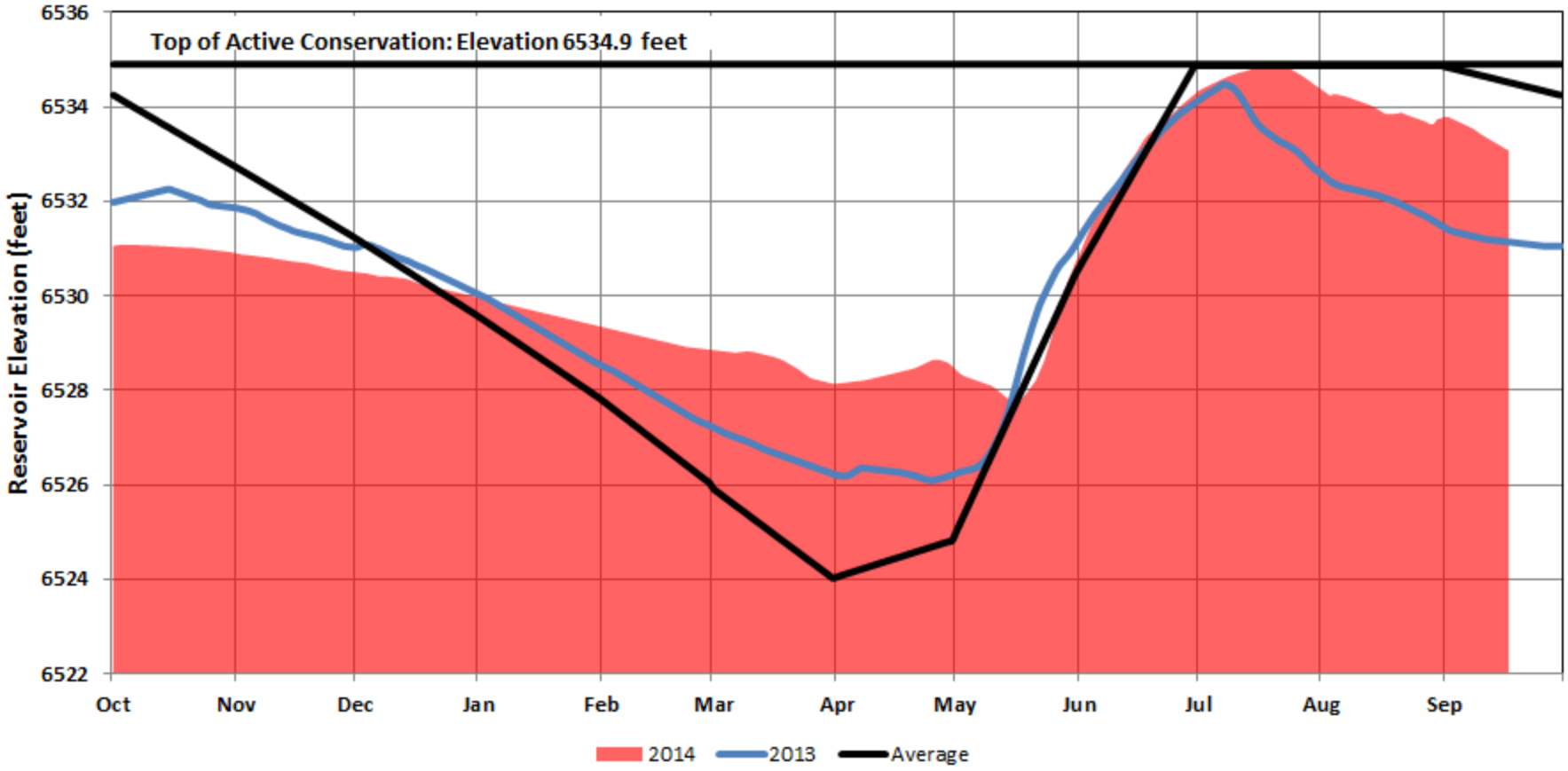


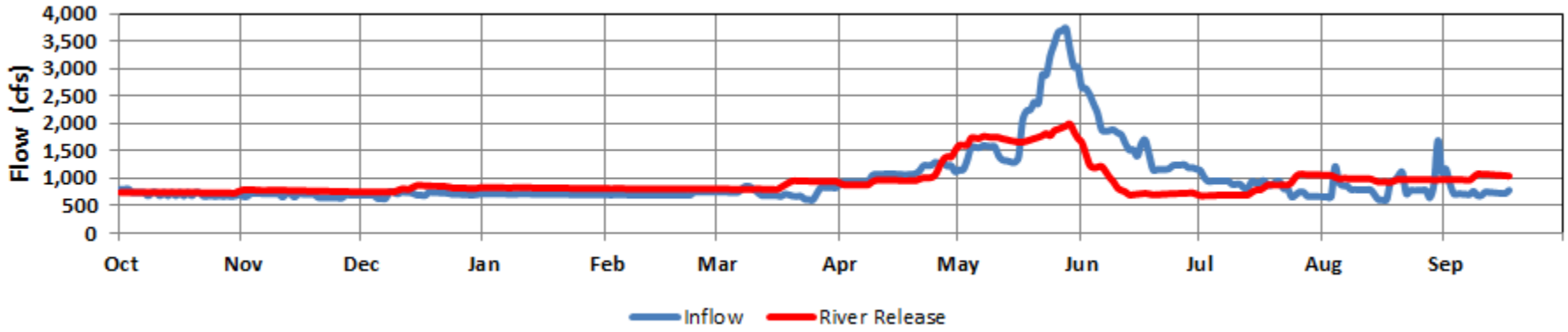
Clark Canyon Reservoir Operations



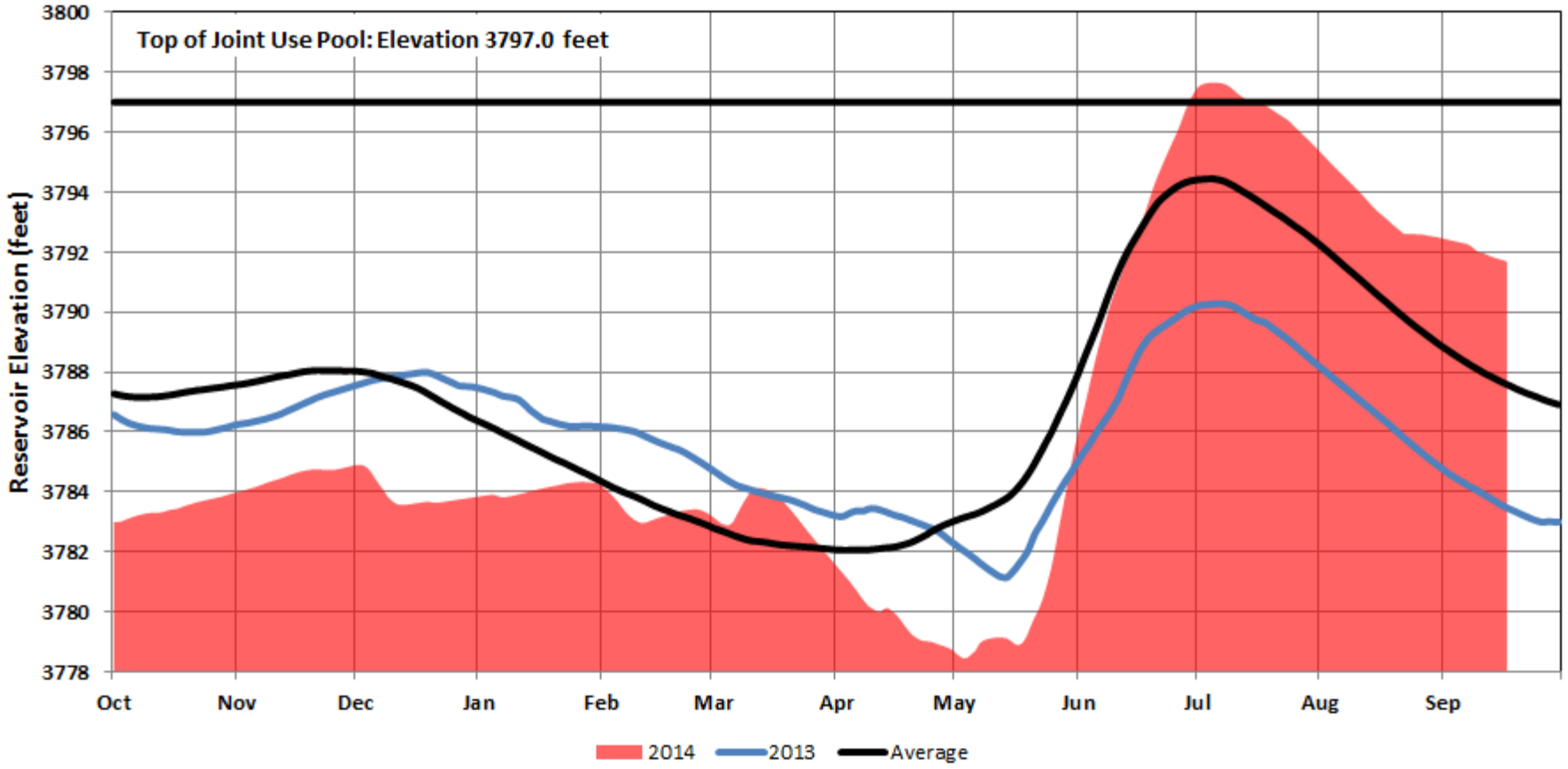


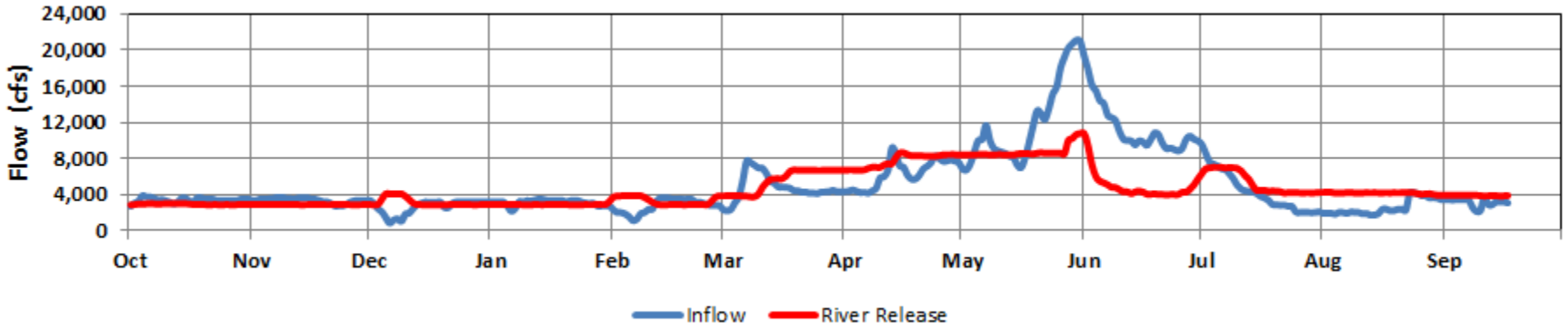
Hebgen Reservoir Operations



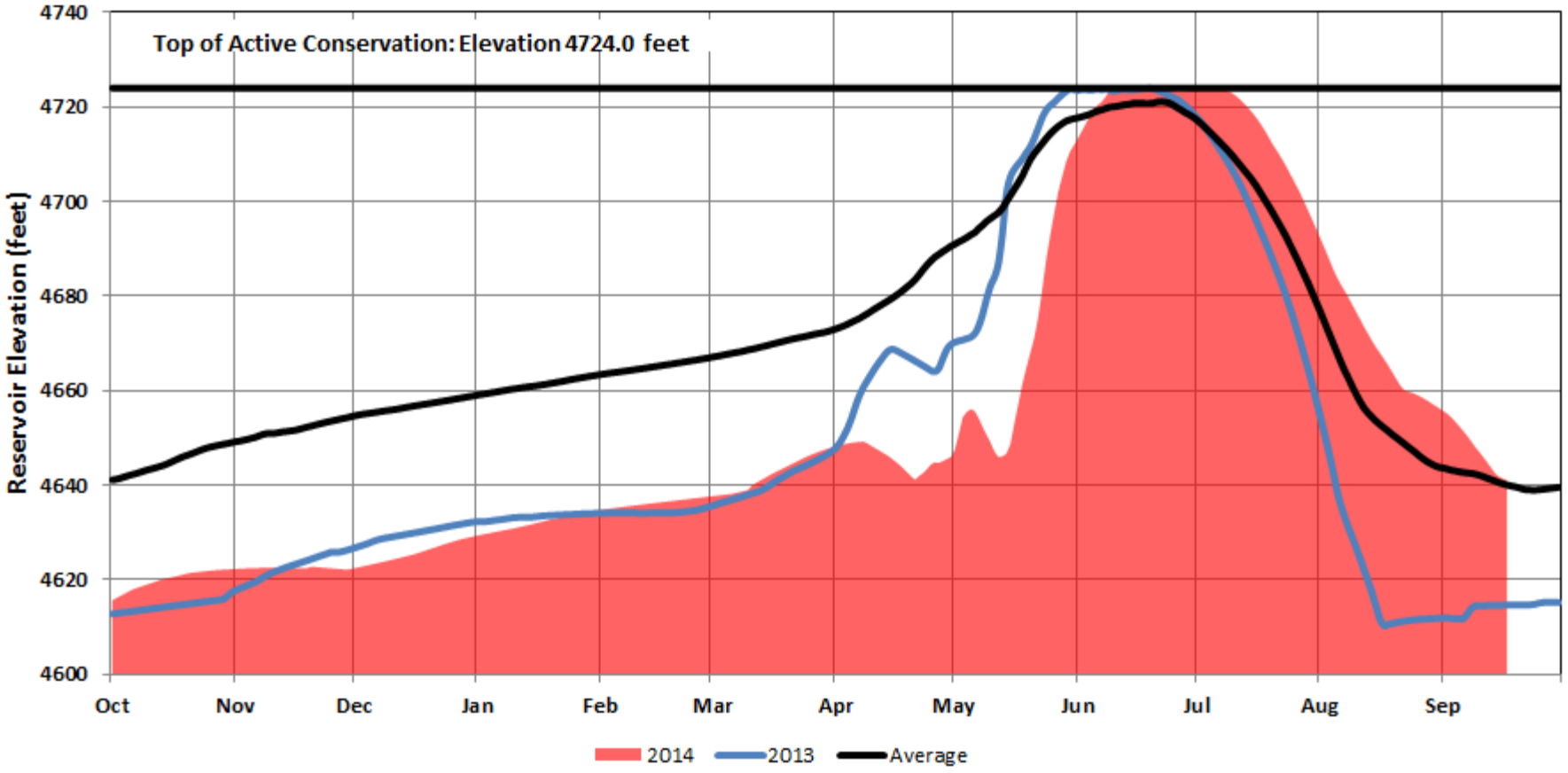


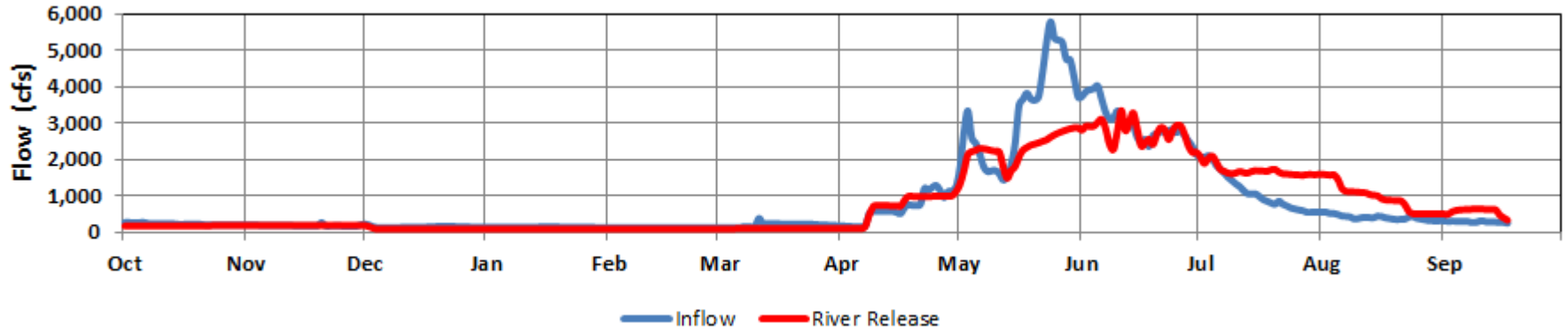
Canyon Ferry Reservoir Operations



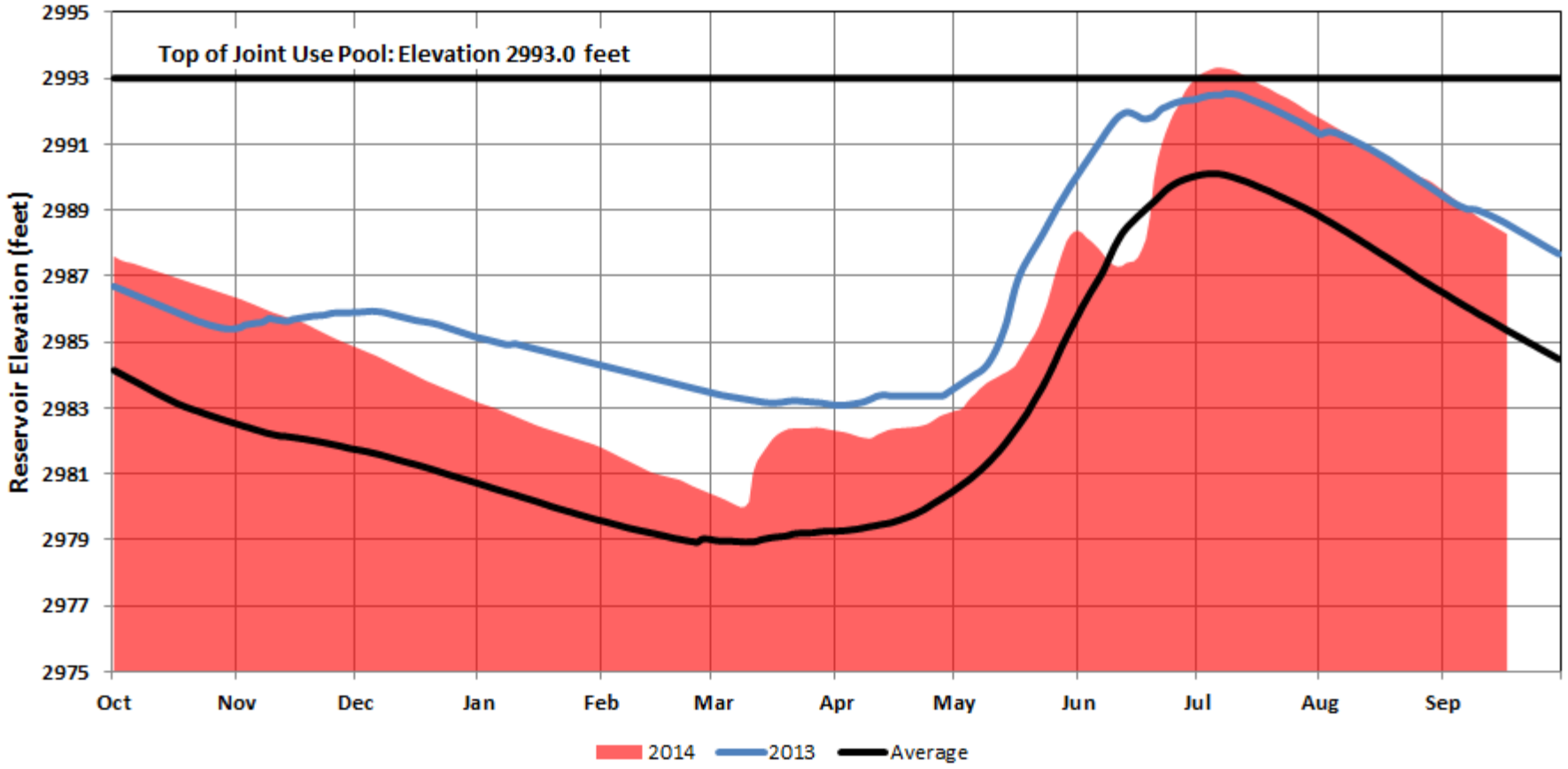


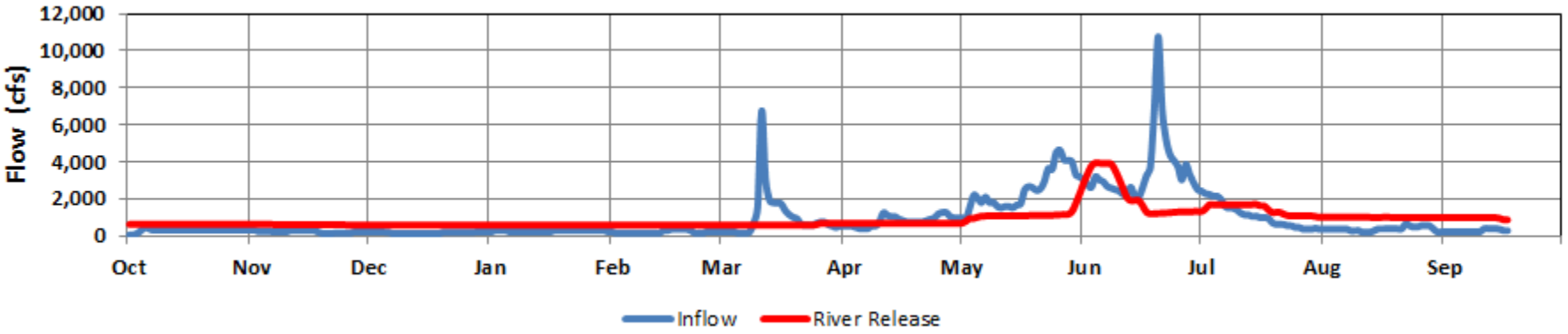
Gibson Reservoir Operations



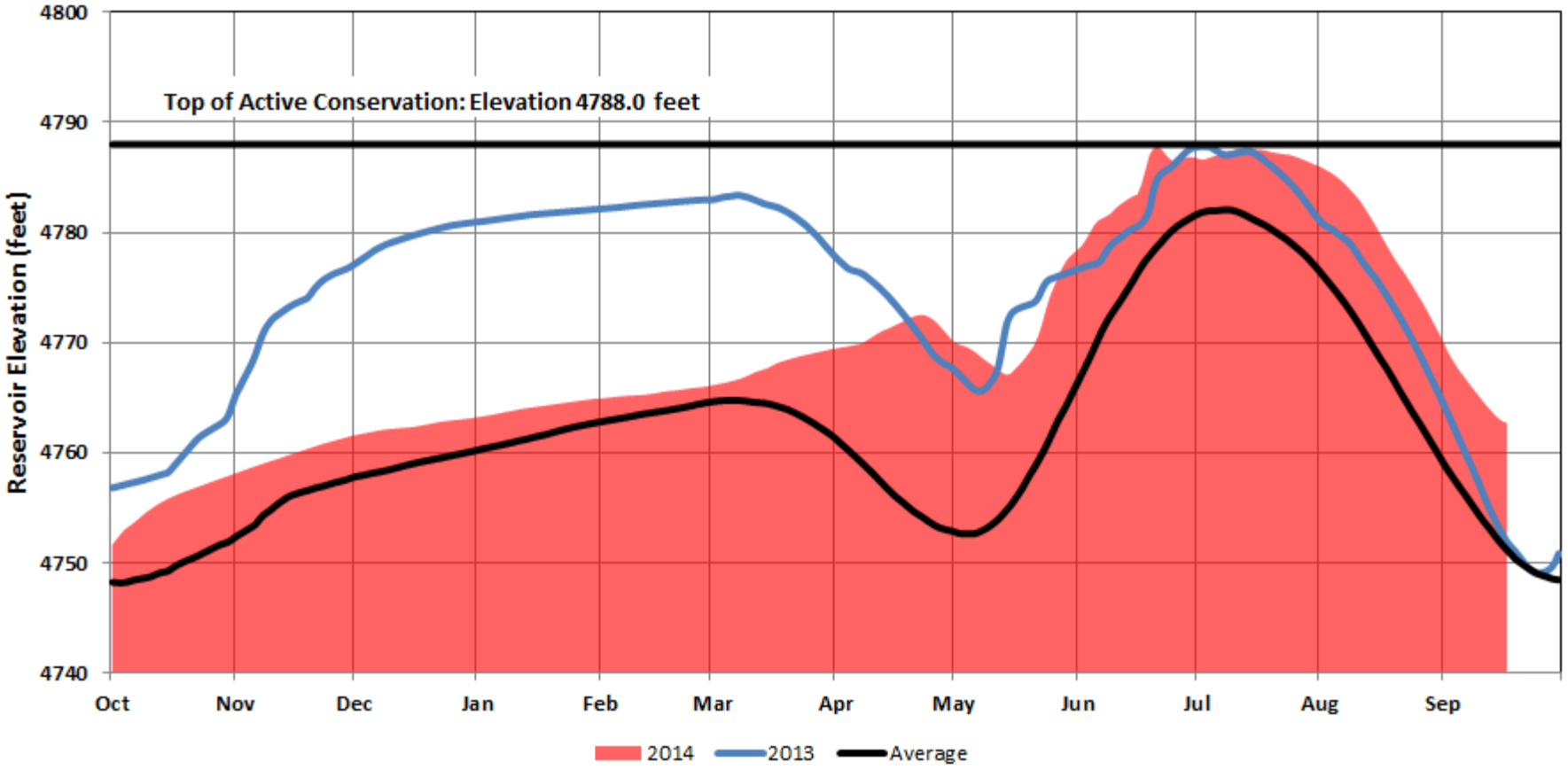


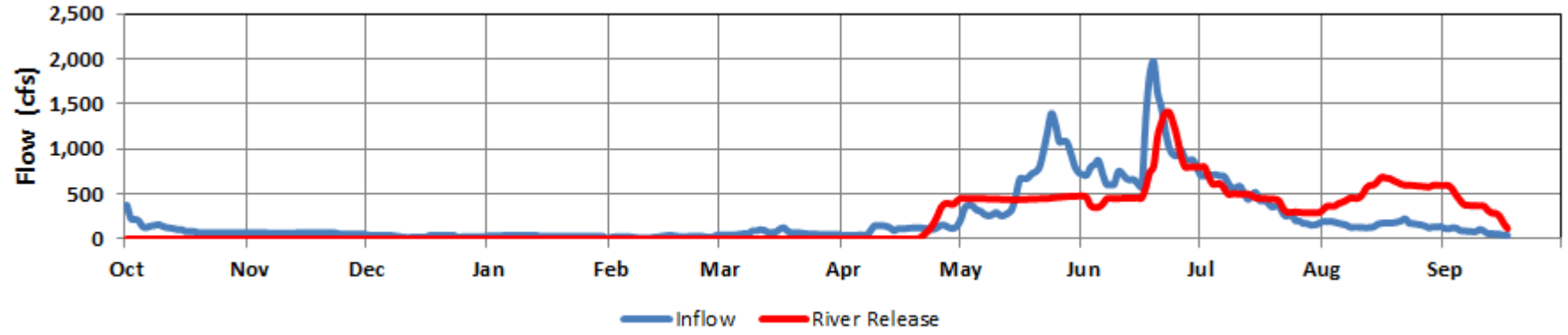
Lake Elwell (Tiber Dam) Operations



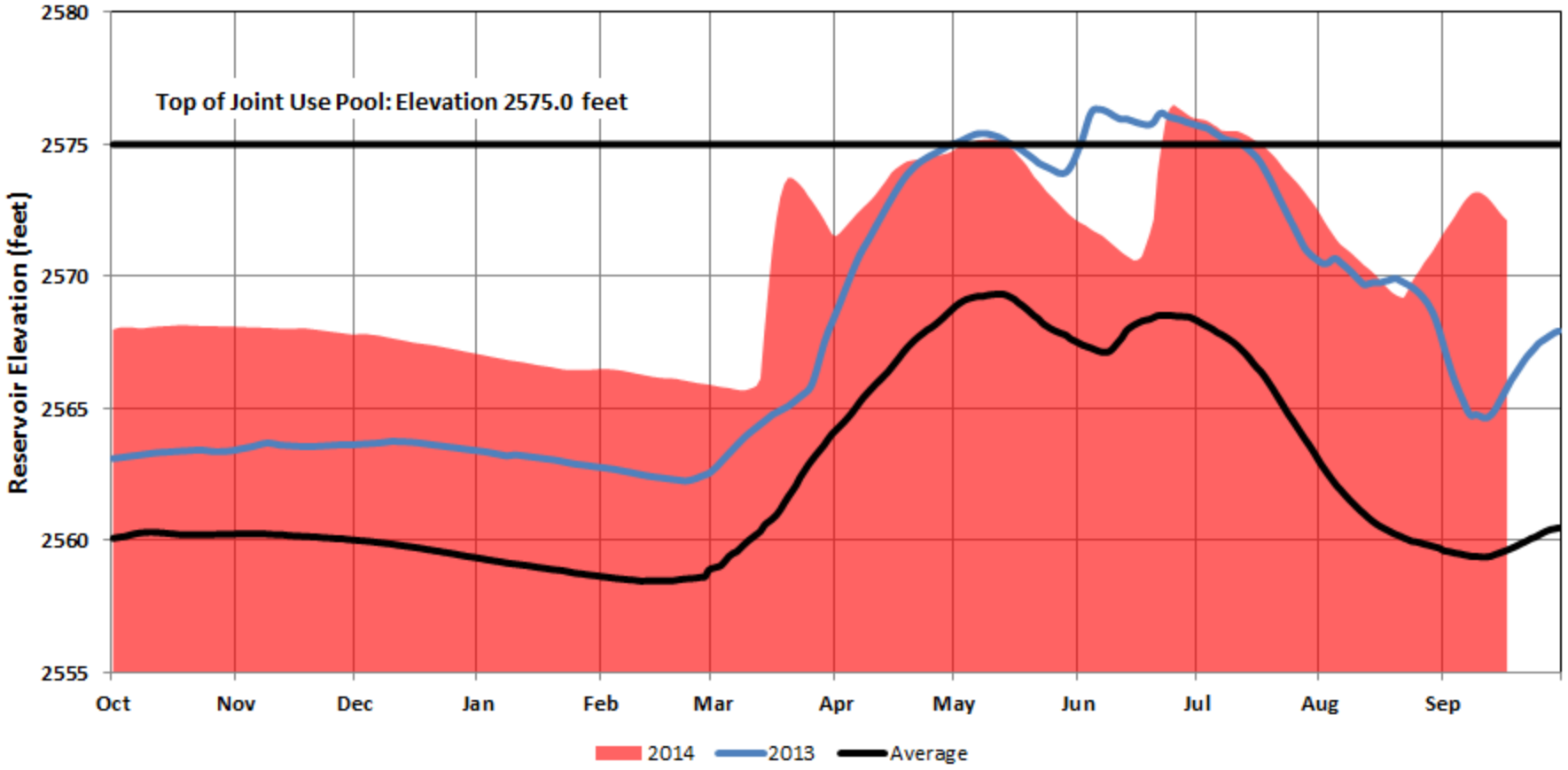


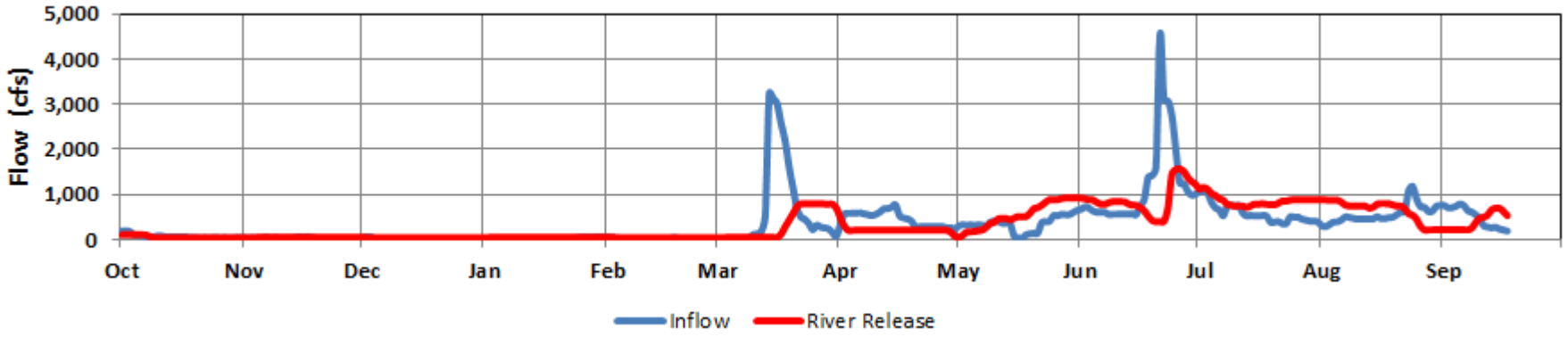
Lake Sherburne Operations



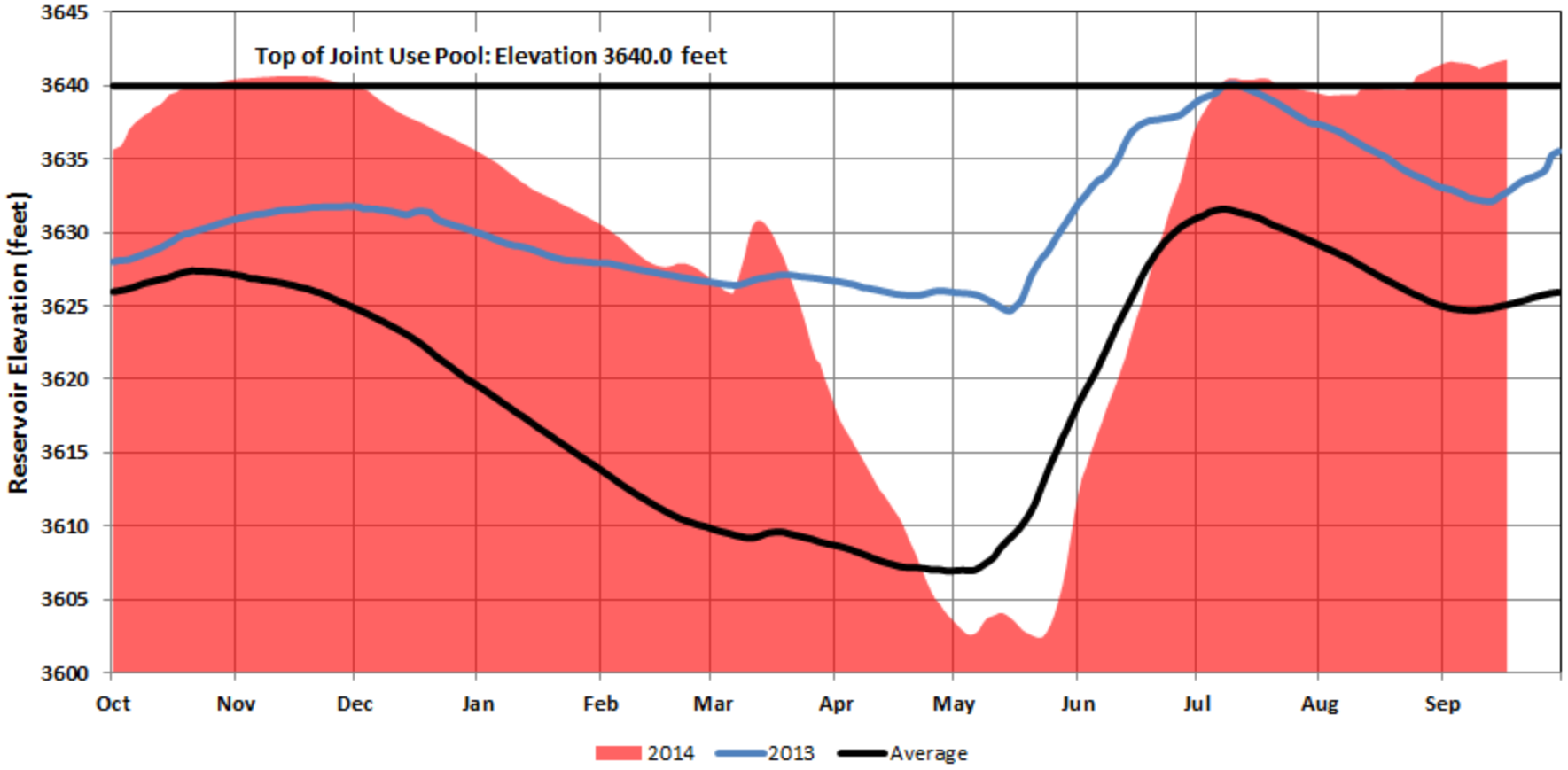


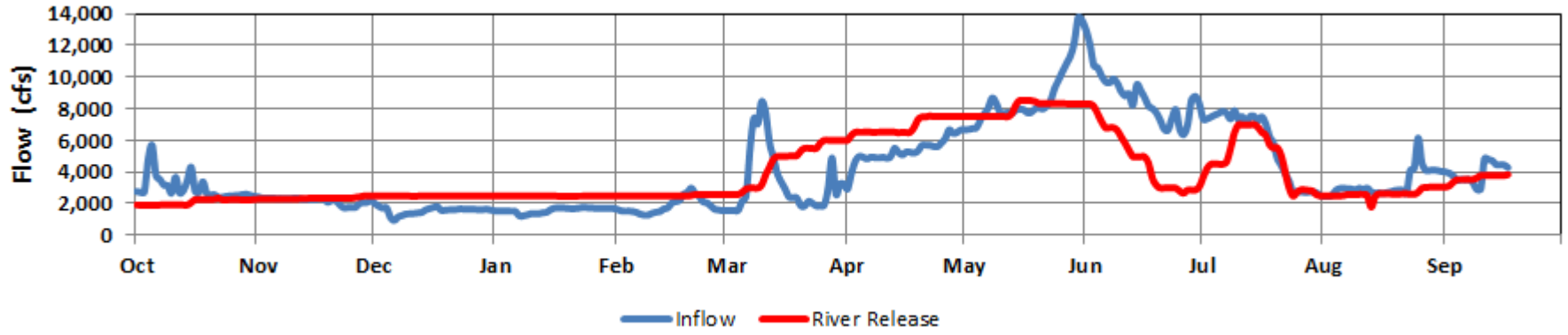
Fresno Reservoir Operations





Bighorn Lake (Yellowtail Dam) Operations





Summary of Reservoir Conditions

- **Storage in all Reclamation reservoirs is above the 30 year average, except for Clark Canyon. Storage in all Reclamation reservoirs except Tiber is above last year's storage level.**

- **Reclamation is currently working with Corps of Engineers to evacuate storage in the Exclusive Flood Control in Bighorn Lake.**

- **Operational outlooks are favorable to maintain desired river fishery flows.**

Reclamation's Internet Website

http://www.usbr.gov/gp/hydromet/

- near real-time data available through the HYDROMET data system
- summaries and plots of historical data
- annual reservoir operating plan publication
- monthly water supply reports
- project data
- snow plots
- links to related internet sites

Reservoir Storage Outlook

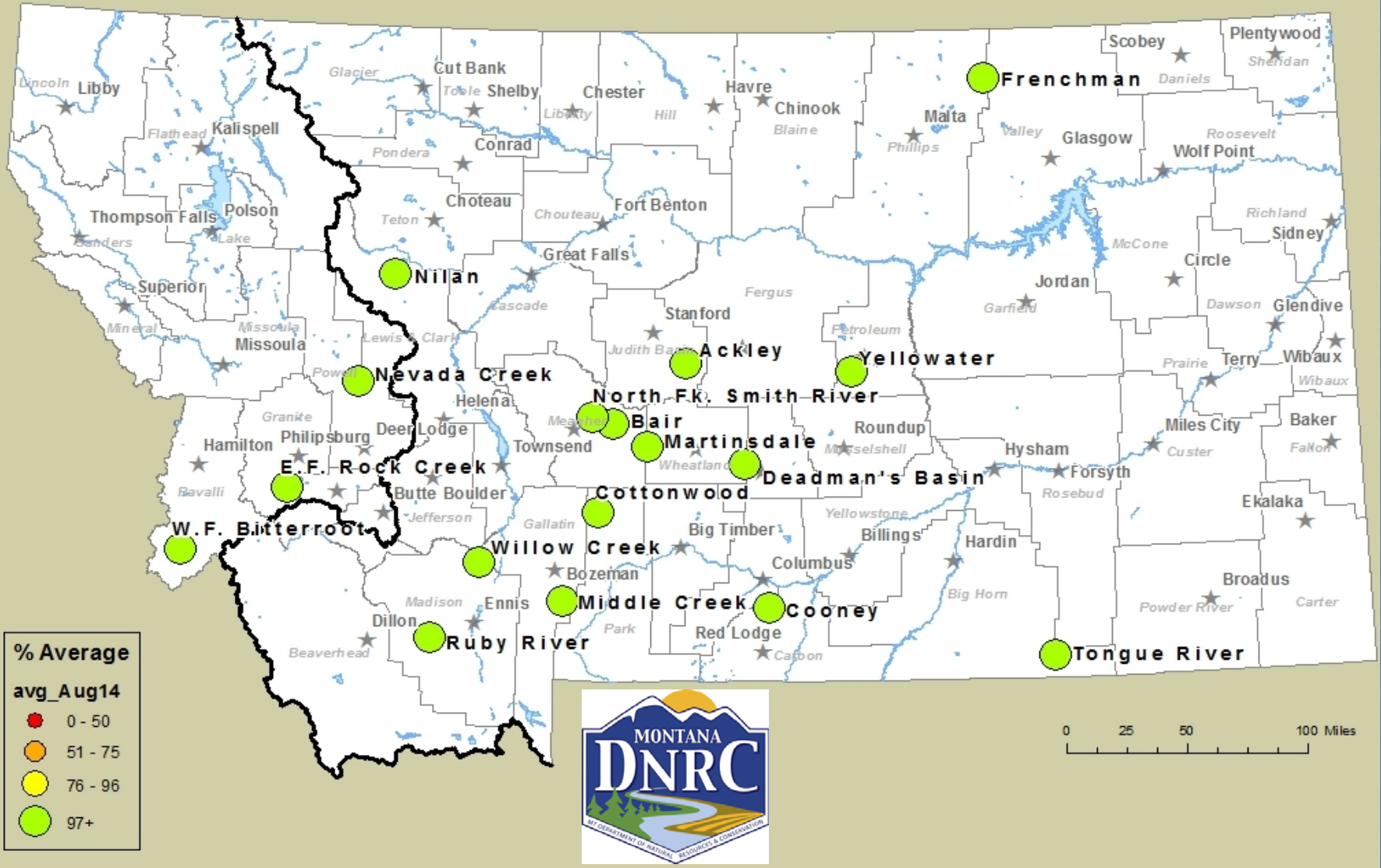
September 18, 2014

DNRC Water Resources Division

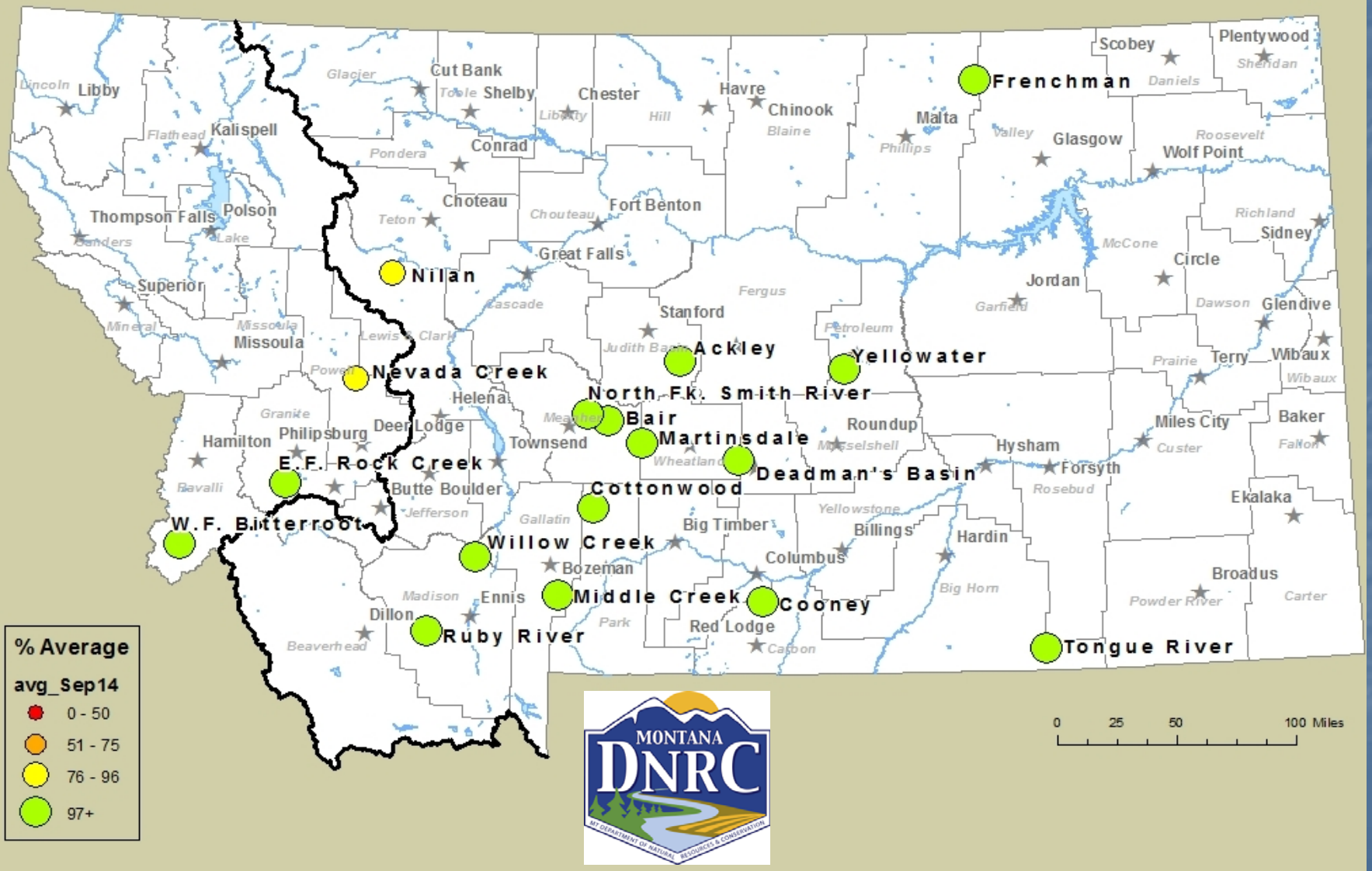
State Water Projects Bureau

Montana DNRC State Water Projects Bureau Reservoirs

Reservoir Contents Report
August 14, 2014



Reservoir Contents Report
September 18, 2014



MONTANA DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION

WATER RESOURCES DIVISION - STATE WATER PROJECTS BUREAU

August 31, 2014

All Contents in Acre-Feet

RESERVOIR	TOTAL CAPACITY (includes dead storage)*	CONTENTS						READING DATE	COMMENTS
	Full Pool Contents	AVERAGE 1960 - 2013	Last Year 8/31/2013	Last Month 7/31/2014	PRESENT 8/31/2014	% CAPACITY 8/31/2014	%AVERAGE 8/31/2014		
ACKLEY	6,722	3,397	4,273	5,399	4,777	71	141	9/4/2014	elev.=4309.87
BAIR	7,300	3,304	2,805	6,416	5,200	71	157	8/28/2014	elev.=5316.4
COONEY	28,230	17,419	19,418	24,440	21,607	77	124	8/30/2014	elev.=4242.89 (21,517 AF)
COTTONWOOD	1,900	677	222	1,745	1,140	60	168	8/25/2014	elev.=5098.69
DEADMAN'S BASIN	75,968	35,803	32,699	61,770	54,837	72	153	8/28/2014	elev.=3910.25 (51,087 AF)
E.F. ROCK CREEK	16,040	6,186	4,782	10,615	9,971	62	161	9/2/2014	elev.=6038.4
FRENCHMAN	2,777	1,572	2,626	2,340	2,717	98	173	9/4/2014	elev.=2264.5
MARTINSDALE	23,348	9,520	6,041	20,016	14,458	62	152	9/2/2014	elev.=4768.9
MIDDLE CREEK	10,184	6,514	6,354	9,130	8,006	79	123	9/2/2014	elev.=6711.6
NEVADA CREEK	11,207	6,318	3,429	9,243	5,953	53	94	8/31/2014	elev.=4599.85
NILAN	10,992	6,170	5,595	7,833	5,841	53	95	8/29/2014	elev.=4430.76 (4,941 AF)
N.FK. SMITH RIVER	11,406	5,697	5,812	10,732	8,241	72	145	8/28/2014	elev.=5477.7
RUBY RIVER	37,612	16,382	15,026	30,594	21,722	58	133	8/26/2014	elev.=5374.6
TONGUE RIVER	79,071	44,982	47,452	71,482	61,178	77	136	9/2/2014	elev.=3423.2
W.F. BITTERROOT	32,362	15,850	15,907	30,664	16,059	50	101	9/1/2014	elev.=4694.28
WILLOW CREEK	18,000	9,630	6,566	16,310	11,929	66	124	8/29/2014	elev.=4727.75
YELLOWATER	3,842	1,388	3,593	2,880	4,039	105	291	9/1/2014	elev.=3119.2

* Note: Reservoir contents include dead storage at the following:

Ackley	1001 AF	**	Tongue River	711 AF	(O&M storage table includes dead storage)
Cooney	90 AF	**	W. F. Bitterroot	656 AF	(O&M storage table includes dead storage)
Deadman's	3750 AF	**	Willow Creek	269 AF	(O&M storage table includes dead storage)
Nilan	900 AF	**			

** O&M slope storage table does not include dead storage (so dead storage has to be added into the storage from the table)

' Note: Cooney capacity reflects capacity after 1982 dam rehabilitation; prior capacity was 24,195 A.F.. Average storage shown is for post rehabilitation data.

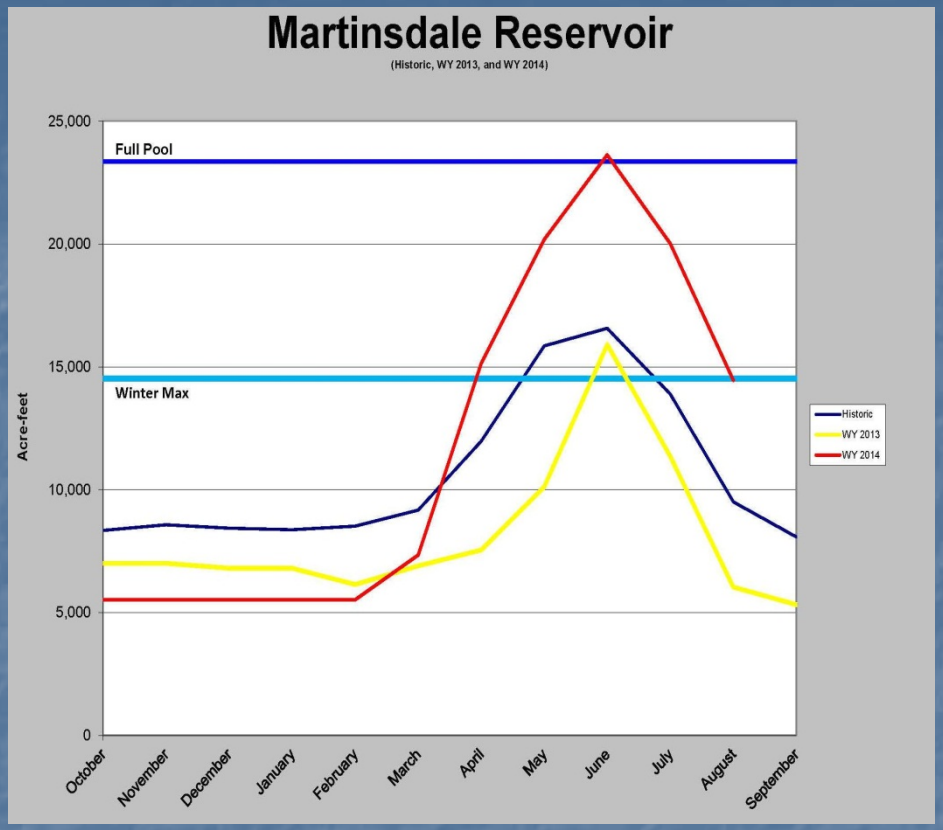
* Note: Middle Creek capacity reflects capacity after 1993 dam rehabilitation; prior capacity was 8,027 A.F.. Average storage shown is for post rehabilitation data.

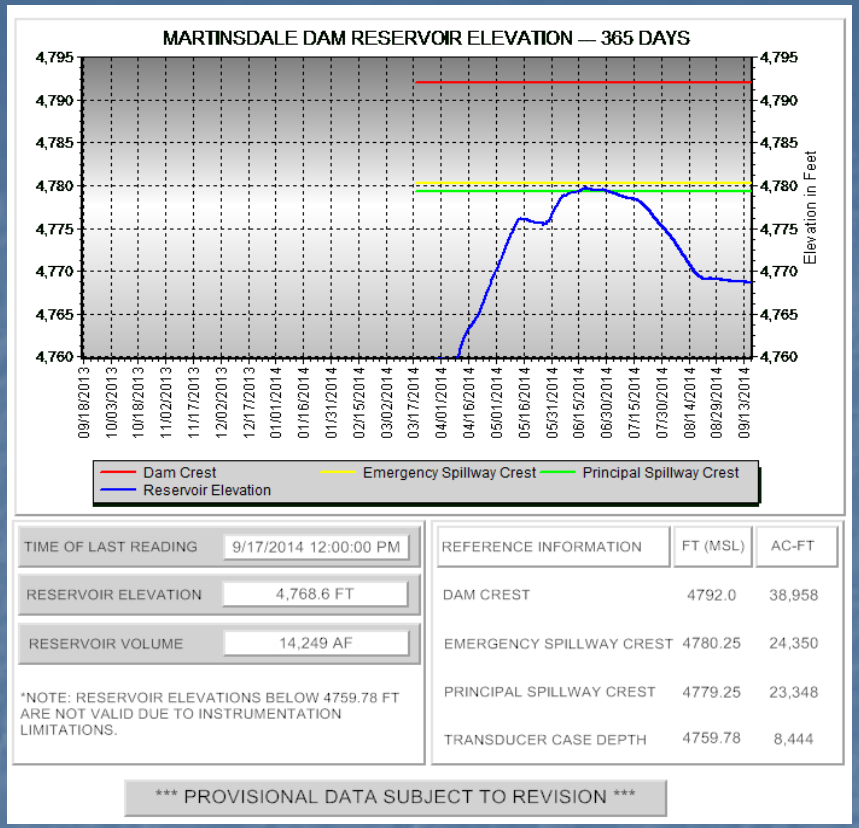
' Note: Nevada Creek Reservoir Capacity reflects live storage capacity survey conducted in year 2000. Prior live storage capacity documented as 12,723 AF.

* Note: Tongue River capacity reflects capacity after 1999 dam rehabilitation; prior capacity was 68,040 A.F.. Average storage is post rehabilitation data.

* Note: Frenchman Reservoir capacity tables updated based on aerial survey; prior capacity was 3752 A.F. Average shown is pre aerial survey

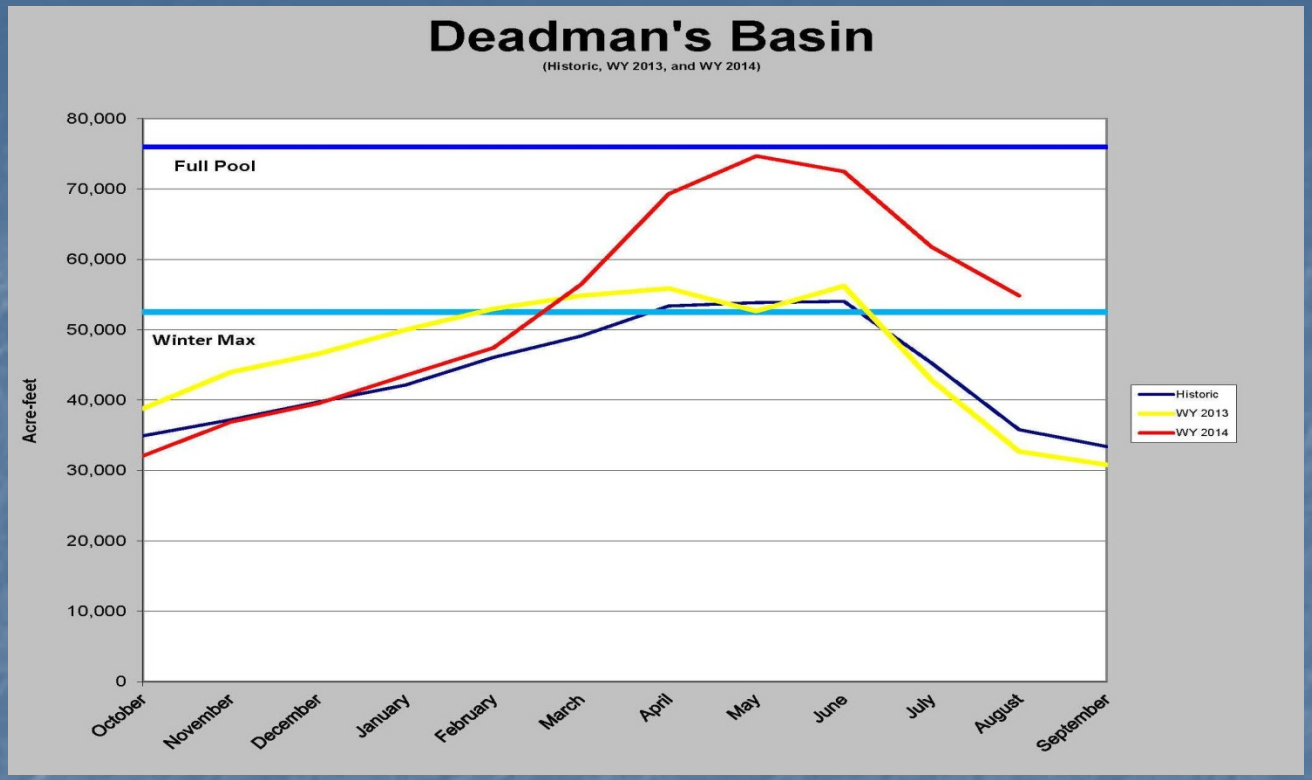
Montana DNRC State Water Projects Bureau
Reservoirs



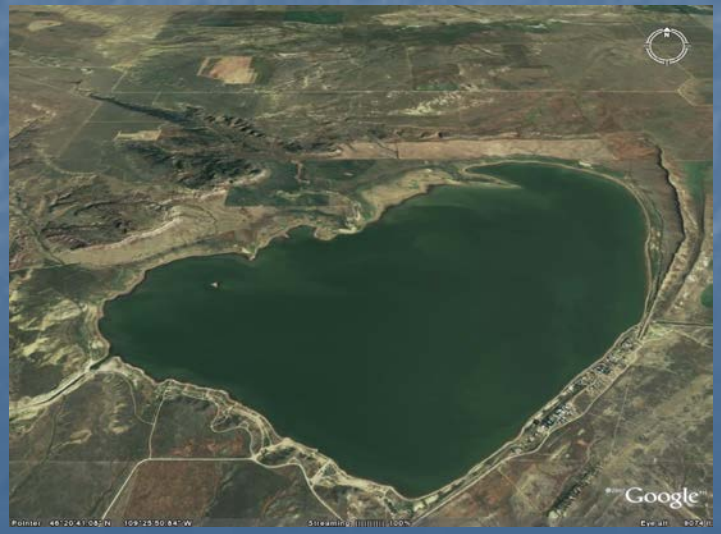


- 62% Capacity
- 14,249 Acre-Feet
- Elev.=4,768.6
- Water Supply is favorable

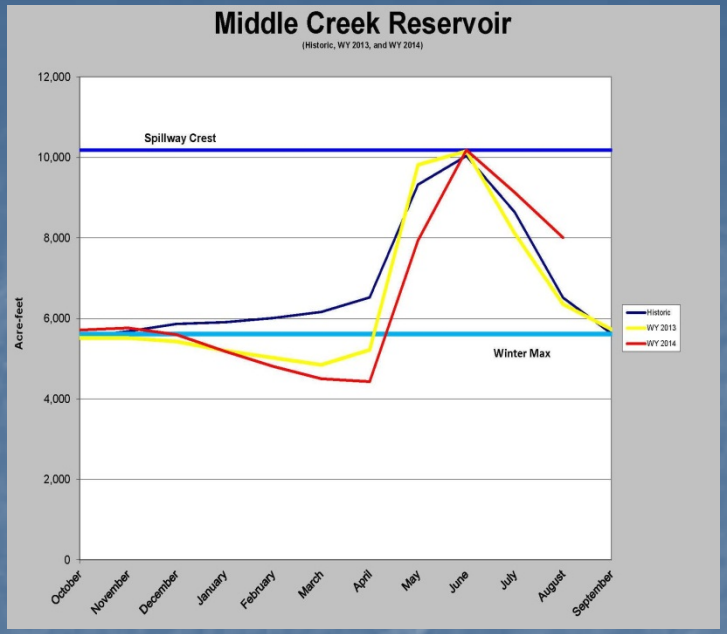
Montana DNRC State Water Projects Bureau Reservoirs



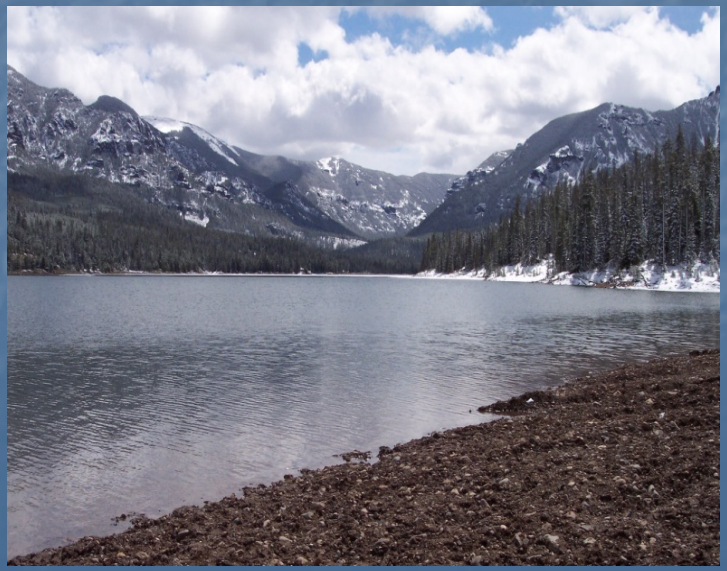
- 72% Capacity
- 54,837 Acre-Feet
- Elev.=3910.25
- Water Supply is favorable

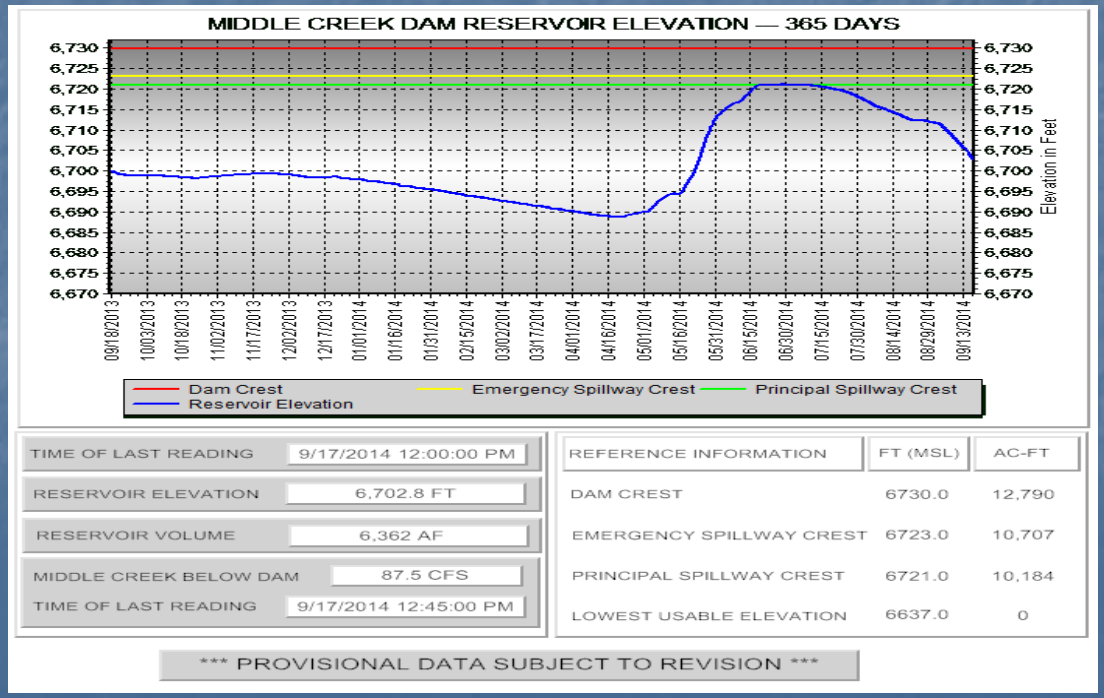


Montana DNRC State Water Projects Bureau Reservoirs



- 62% Capacity
- Outflows=88 cfs
- 6,362 Acre-Feet
- Elev.=6702.8
- Water Supply is favorable



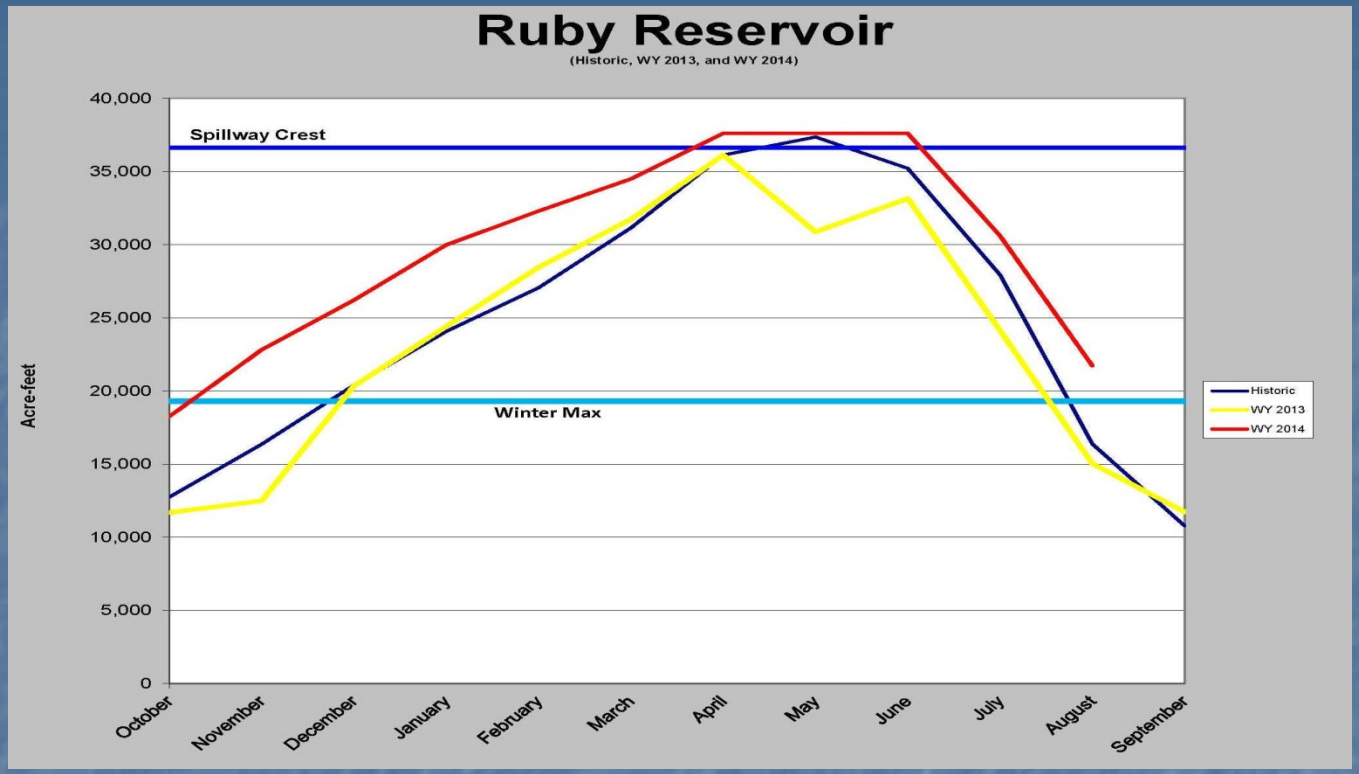


TIME OF LAST READING	9/17/2014 12:00:00 PM
RESERVOIR ELEVATION	6,702.8 FT
RESERVOIR VOLUME	6,362 AF
MIDDLE CREEK BELOW DAM	87.5 CFS
TIME OF LAST READING	9/17/2014 12:45:00 PM

REFERENCE INFORMATION	FT (MSL)	AC-FT
DAM CREST	6730.0	12,790
EMERGENCY SPILLWAY CREST	6723.0	10,707
PRINCIPAL SPILLWAY CREST	6721.0	10,184
LOWEST USABLE ELEVATION	6637.0	0

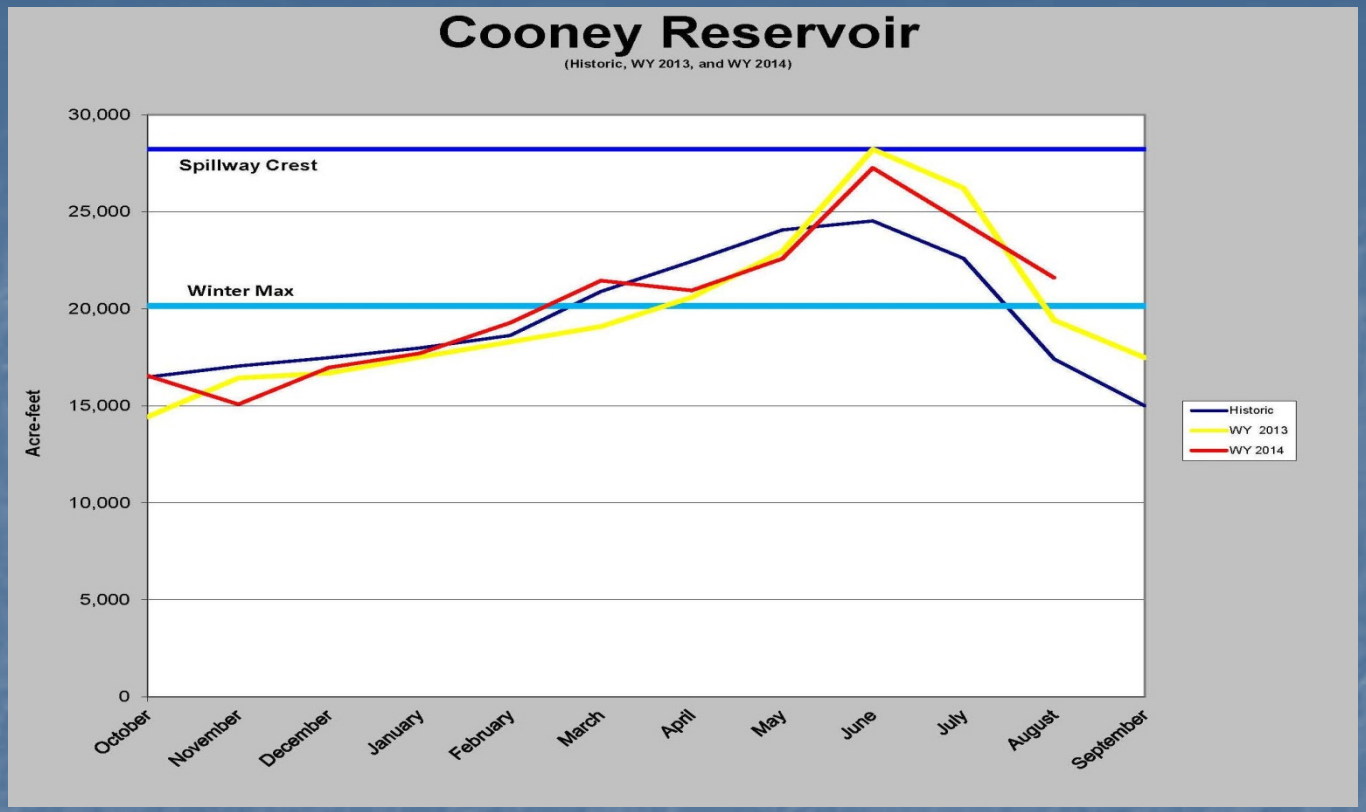
*** PROVISIONAL DATA SUBJECT TO REVISION ***

Montana DNRC State Water Projects Bureau Reservoirs



- 58% Capacity
- Inflows= 89 cfs
- Outflows=242 cfs
- 21,722 Acre-Feet
- Elev.=5374.6
- Water Supply is favorable

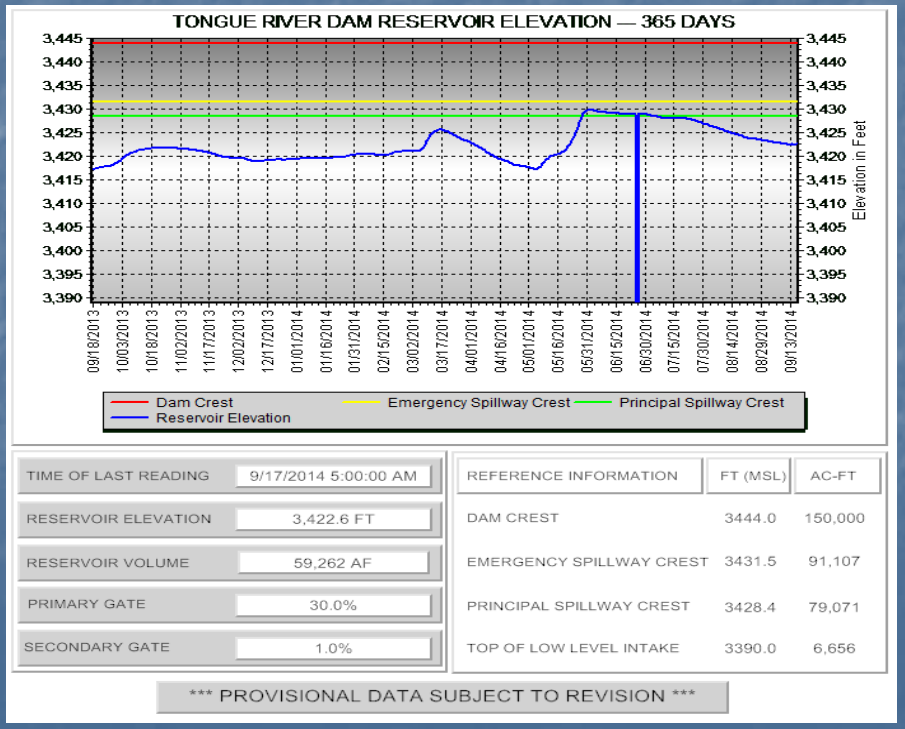
Montana DNRC State Water Projects Bureau Reservoirs



- 77% Capacity
- 21,607 Acre-Feet
- Elev.=4249.89
- Inflows= 110 cfs
- Outflows= 180 cfs
- Water Supply is favorable

Montana DNRC State Water Projects Bureau Reservoirs

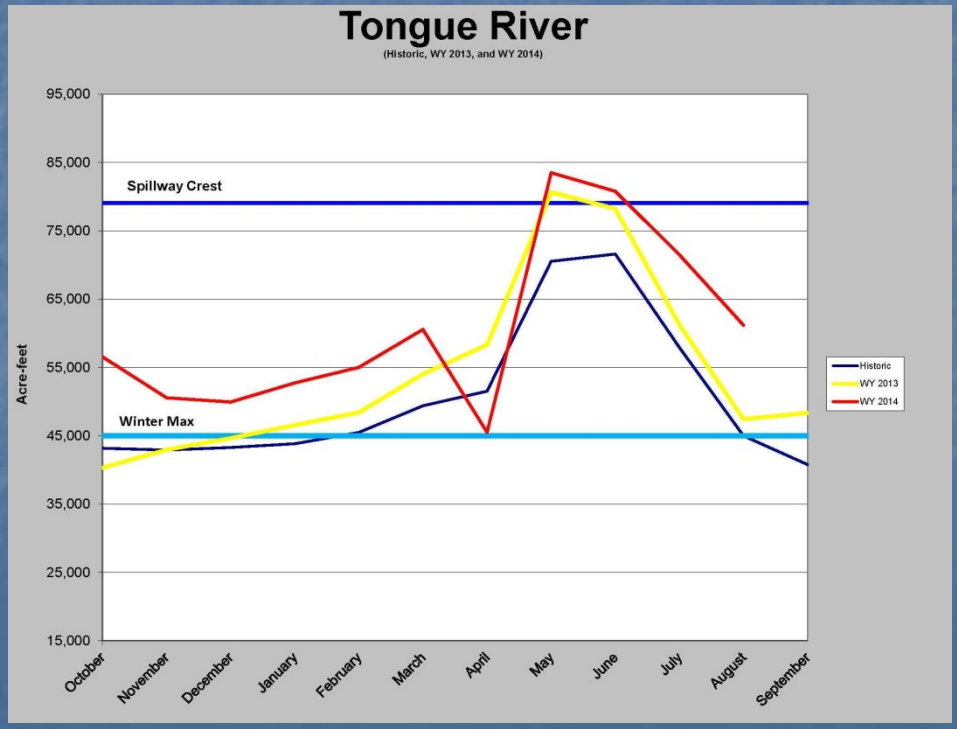
- 75% Capacity
- 59,262 Acre-Feet
- Elev.=3422.6
- Inflows=410 cfs
- Outflows=400 cfs
- Water Supply is favorable



TIME OF LAST READING	9/17/2014 5:00:00 AM
RESERVOIR ELEVATION	3,422.6 FT
RESERVOIR VOLUME	59,262 AF
PRIMARY GATE	30.0%
SECONDARY GATE	1.0%

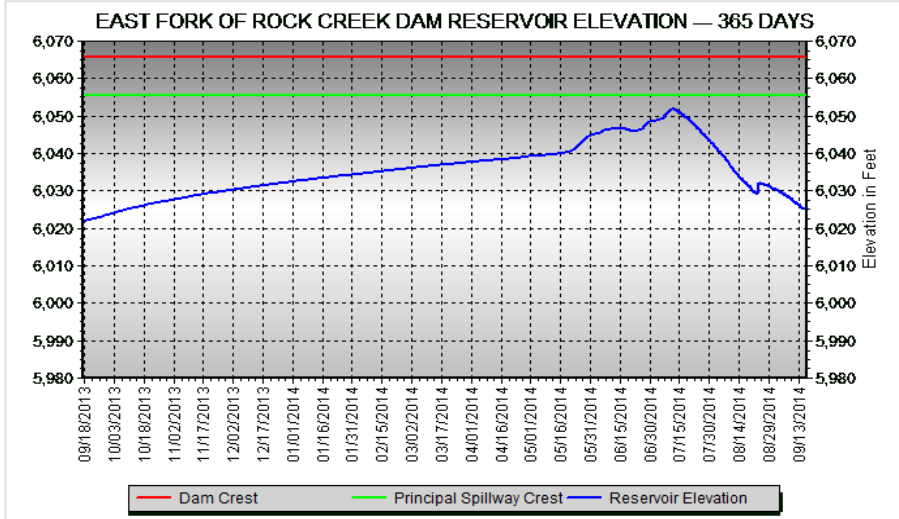
REFERENCE INFORMATION	FT (MSL)	AC-FT
DAM CREST	3444.0	150,000
EMERGENCY SPILLWAY CREST	3431.5	91,107
PRINCIPAL SPILLWAY CREST	3428.4	79,071
TOP OF LOW LEVEL INTAKE	3390.0	6,656

*** PROVISIONAL DATA SUBJECT TO REVISION ***



Montana DNRC State Water Projects Bureau Reservoirs

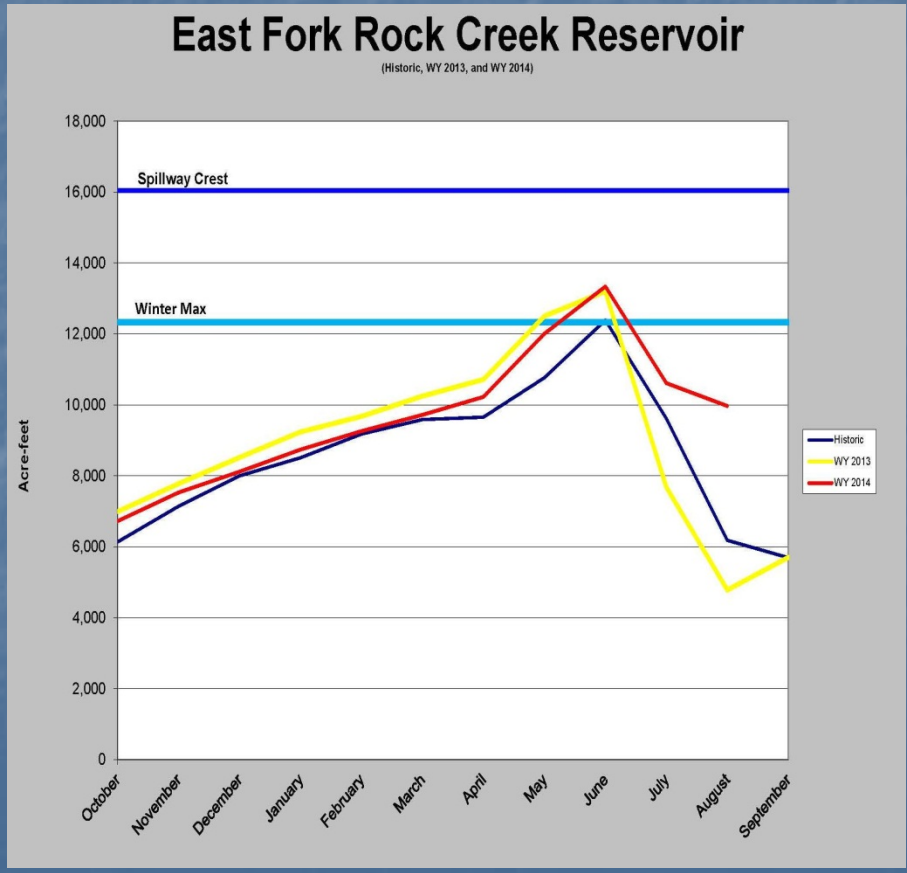
- 39% Capacity
- 6,185 Acre-Feet
- Elev.=6025.6
- Water Supply is favorable



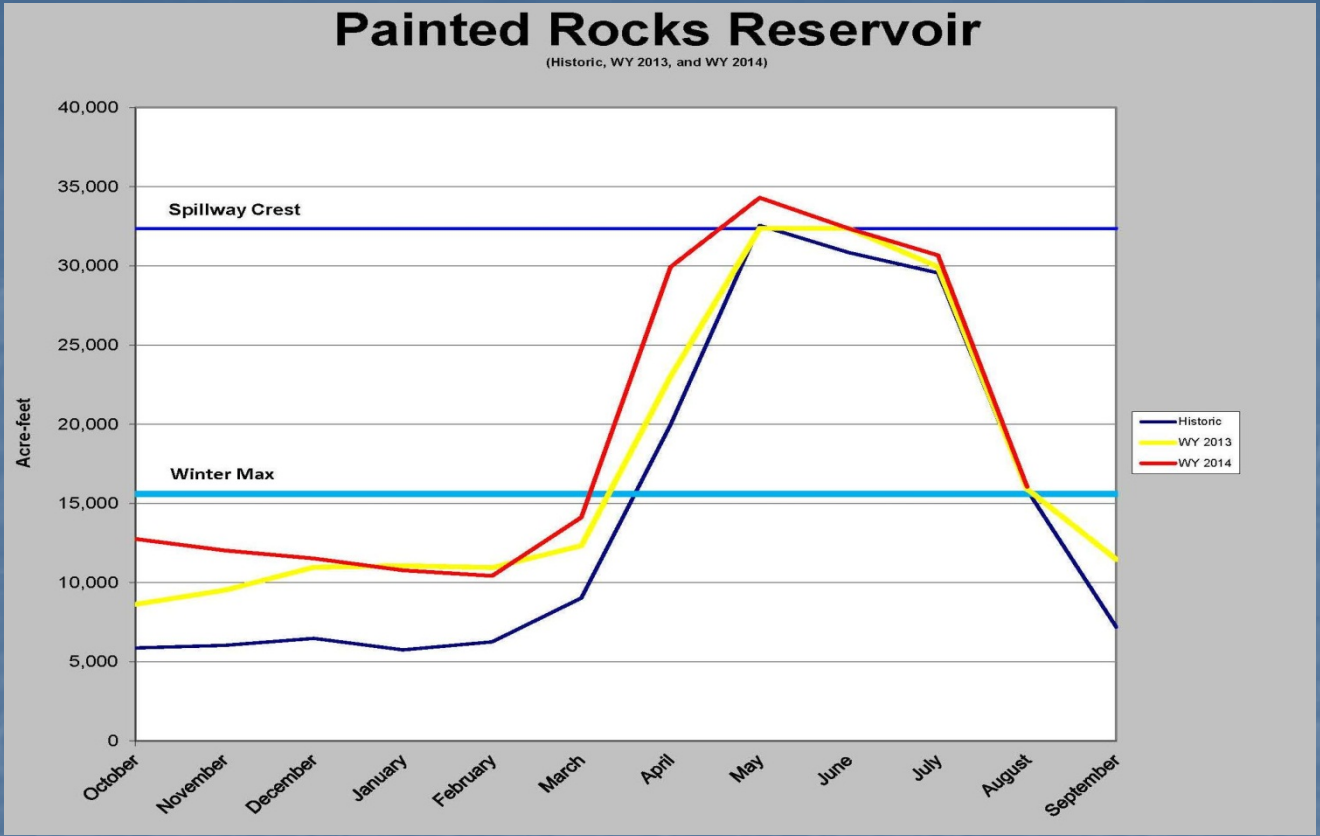
TIME OF LAST READING	9/17/2014 5:00:00 AM
RESERVOIR ELEVATION	6,025.6 FT
RESERVOIR VOLUME	6,185 AF

REFERENCE INFORMATION	FT (MSL)	AC-FT
DAM CREST	6065.6	19,850
PRINCIPAL SPILLWAY CREST	6055.5	16,040
LOWEST USABLE ELEVATION	5989.7	0

*** PROVISIONAL DATA SUBJECT TO REVISION ***



Montana DNRC State Water Projects Bureau Reservoirs



- 50% Capacity
- 16,059 Acre-Feet
- Elev.=4694.28
- Outflows=206 cfs
- Water Supply is favorable

Summary

- Majority of DNRC SWP Reservoirs filled to capacity during spring runoff.
- Early September precipitation provided brief chance for late season storage at select projects.
- Irrigation season winding down, releases decreasing steadily.
- Water Supply is favorable for DNRC SWP reservoirs and water users should expect full contracted deliveries through WY 2014
- Assuming normal conditions throughout the remainder of WY 2014 winter carryover levels should be favorable to start WY 2015.

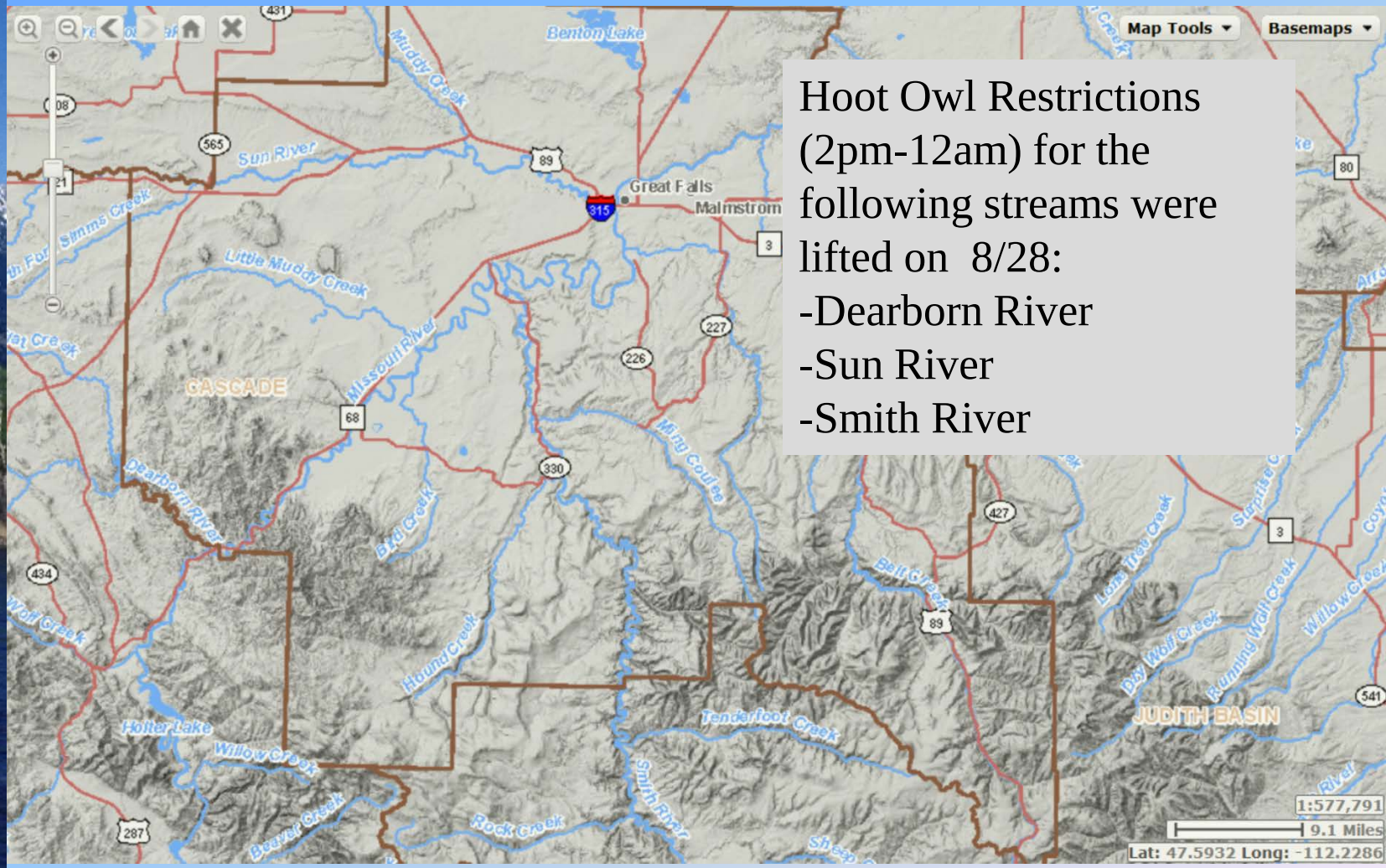
Updates on Fishing and Fire Restrictions

Governor's Drought and Water Supply Advisory Committee

Stephen Begley
Water Conservation Specialist

September 18, 2014

Fishing Restrictions



Montana Fish, Wildlife & Parks

Fire Restrictions on FWP Lands

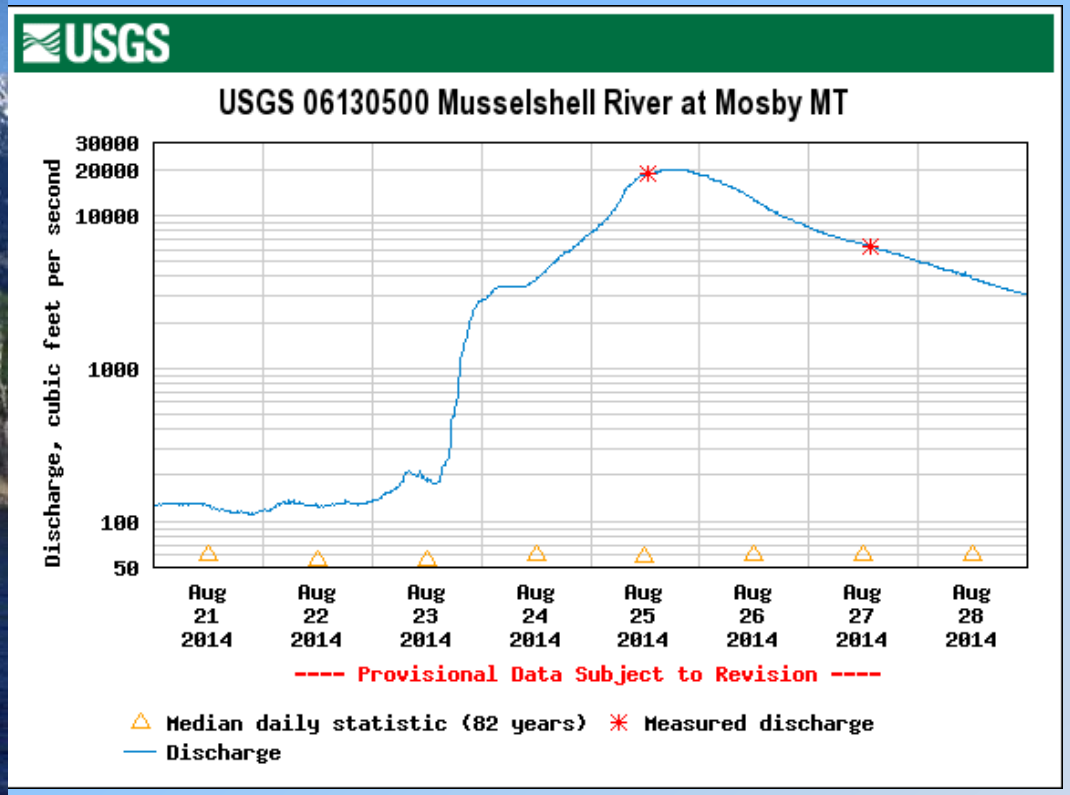
Region 7:

Stage I Fire Restrictions:

- Broadus Bridge FAS
- Powder River County (August 6)

Montana Fish, Wildlife & Parks

Flood Update

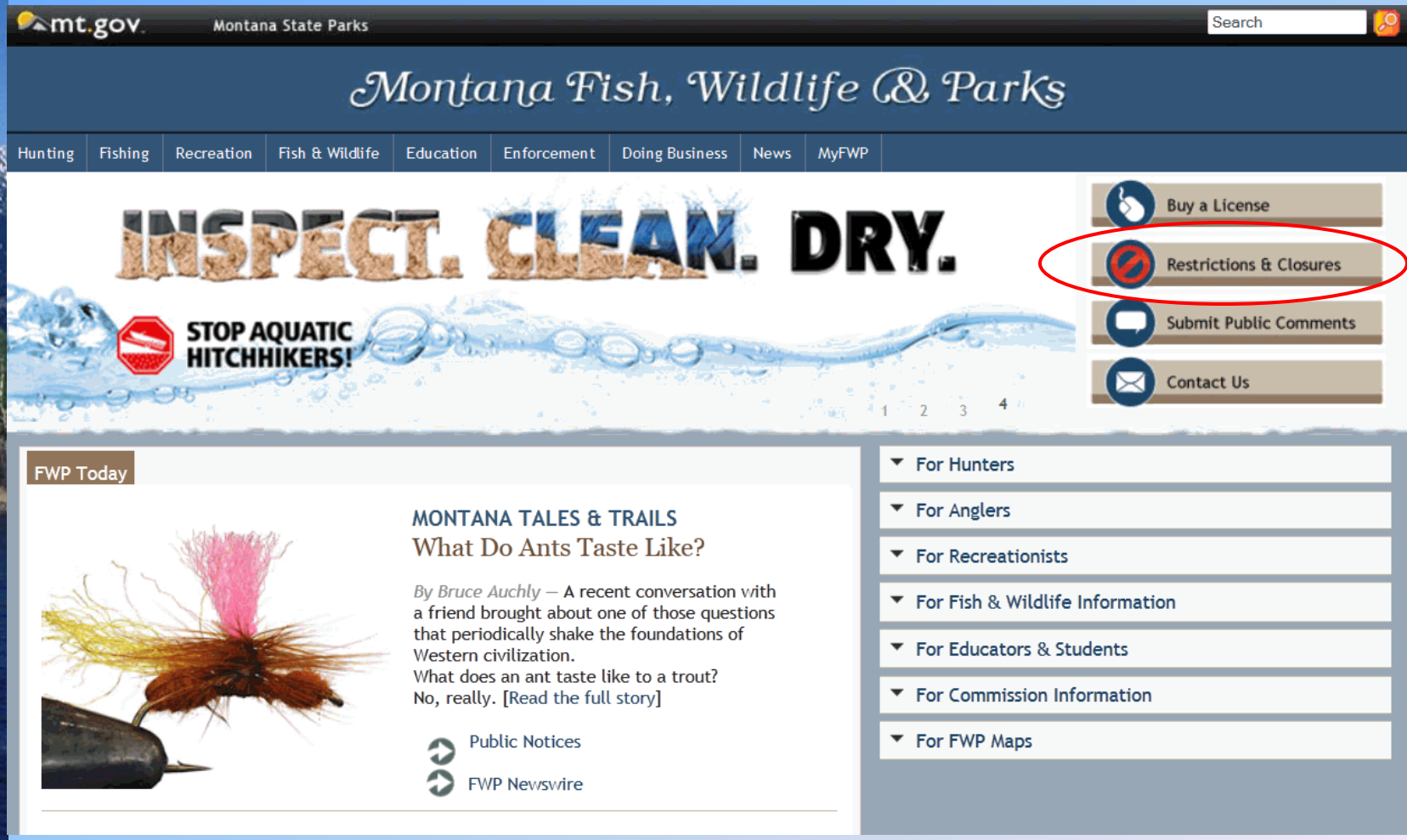


-Region 6 has seen an uptick in stream permitting applications for damaged infrastructure;

-Ongoing damage assessment activities on Flatwillow Creek and the Lower Musselshell.

Montana Fish, Wildlife & Parks

Stay Informed



Montana Fish, Wildlife & Parks

Questions?

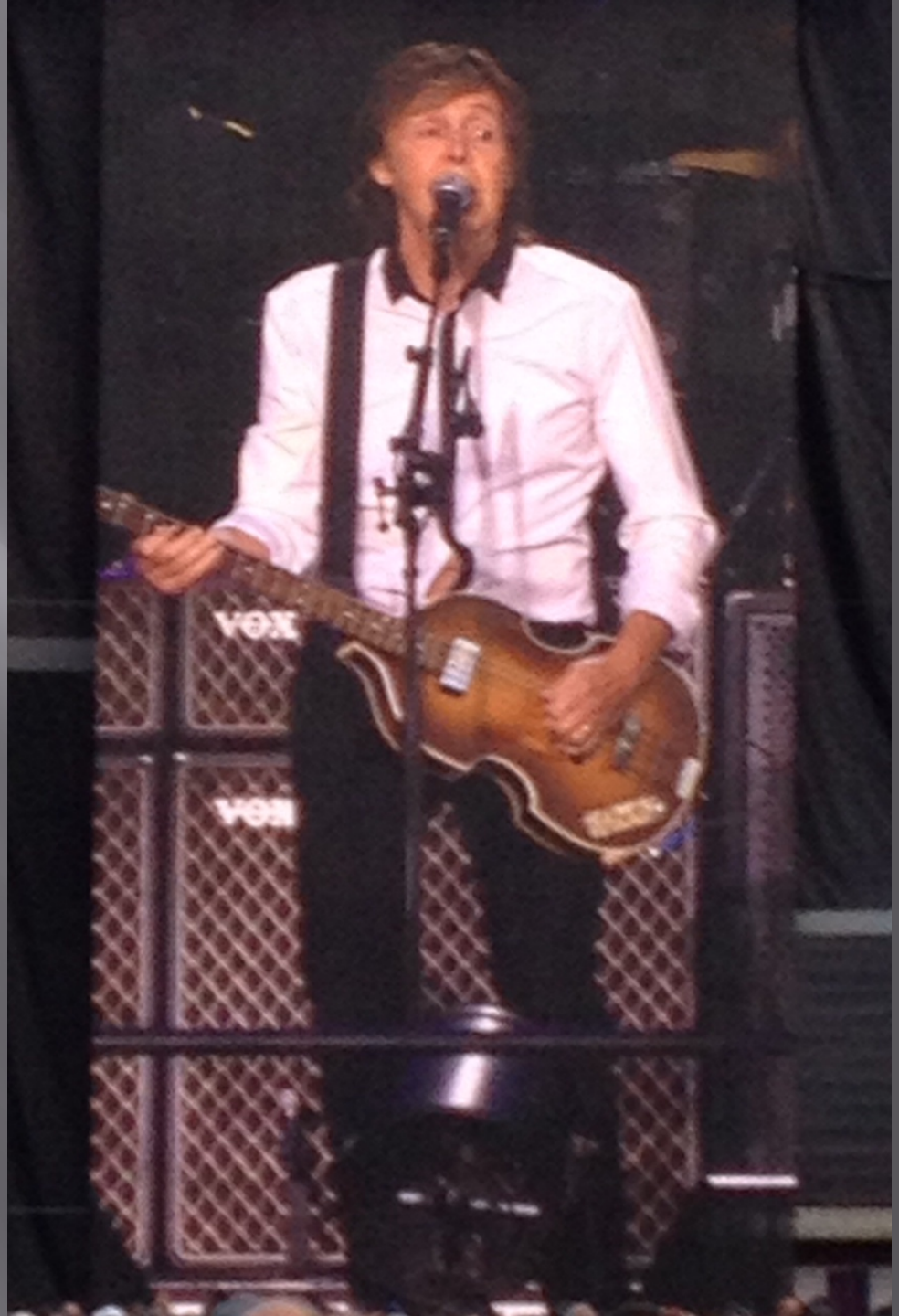
Governor's Drought and Water Supply Advisory Committee
September 2014 Update

Harold Gemmell
DNRC Logistics Coordinator, NRCC
hgemmell@mt.gov (406) 329-4996

Montana Folk
Festival
Butte America

James McMurtry
Top Hat Missoula

Sir Paul McCartney
Washington-Grizzly Stadium



ZZ Top
Missoula

Waterton Park

Spruce Meadows
Masters Tournament
Calgary Alberta

Spruce Meadows Closing Ceremonies
RCMP Musical Ride

Canadian Rockies
North of Waterton

Northern Rockies Area 7 Day Significant Fire Potential

Legend

Issued: Tuesday, Sep 16, 2014

Parameters: None

Fuel Dryness

- Moist - Little or no risk for large fires.
- Dry - Low risk of large fires in the absence of a "High Risk" event.
- Very dry - Low/Moderate risk of large fires in the absence of a "High Risk" event.
- Data Unavailable.

High Risk Events

- W - Wind - Sustained speeds of 20 mph or greater.
- H - Hot and Dry - Temperatures above normal with humidity 20% or less.
- ⚡ - Lightning - LALs of 3 or higher.

Missing Stations

- BONNERS FERRY
- Gates Park
- GLEASON
- ARROWWOOD 2
- MARSHALL CO

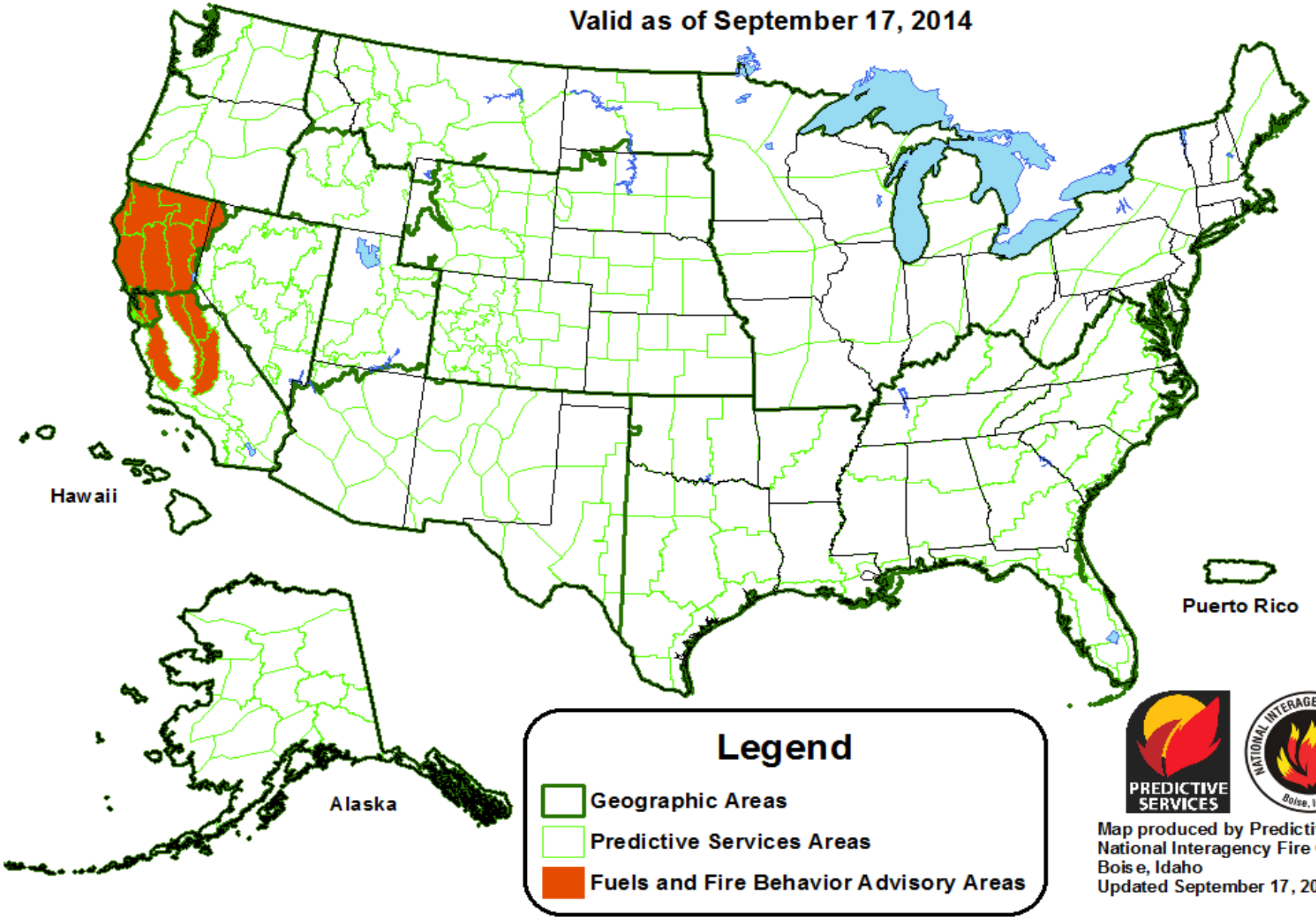
Predictive Service Area	Mon Sep 15	Tue Sep 16	Wed Sep 17	Thu Sep 18	Fri Sep 19	Sat Sep 20	Sun Sep 21	Mon Sep 22
NR01 - North ID Panhandle								
NR02 - Northwest Montana								
NR03 - South ID Panhandle								
NR04 - Western Montana								
NR05 - Camas Prairie of Idaho								
NR06 - North Central ID and Bitterroot/Sapphire Mountains								
NR07 - Glacier NP and Wilderness Areas								
NR08 - SW Montana W of Continental Divide								
NR09 - Big Hole-SW Montana E of Continental Divide								
NR10 - Northern Front Range								
NR11 - West Central Montana								
NR12 - South Central Montana & Yellowstone NP								
NR13 - Northern Plains & Missouri Breaks								
NR14 - Southern Montana (Big Horn / Powder River)								
NR15 - NE Montana & NW N. Dakota								
NR16 - SE Montana & SW N. Dakota								
NR17 - Northeastern North Dakota								
NR18 - Southeastern North Dakota								

Weather

A weak disturbance is bringing isolated showers and wet thunderstorms over N ID and Western MT today in PSAs 3-6 and a few will develop later in PSAs 8-9. Otherwise warm dry conditions will continue today and

Fuels & Fire Behavior Advisories

Valid as of September 17, 2014



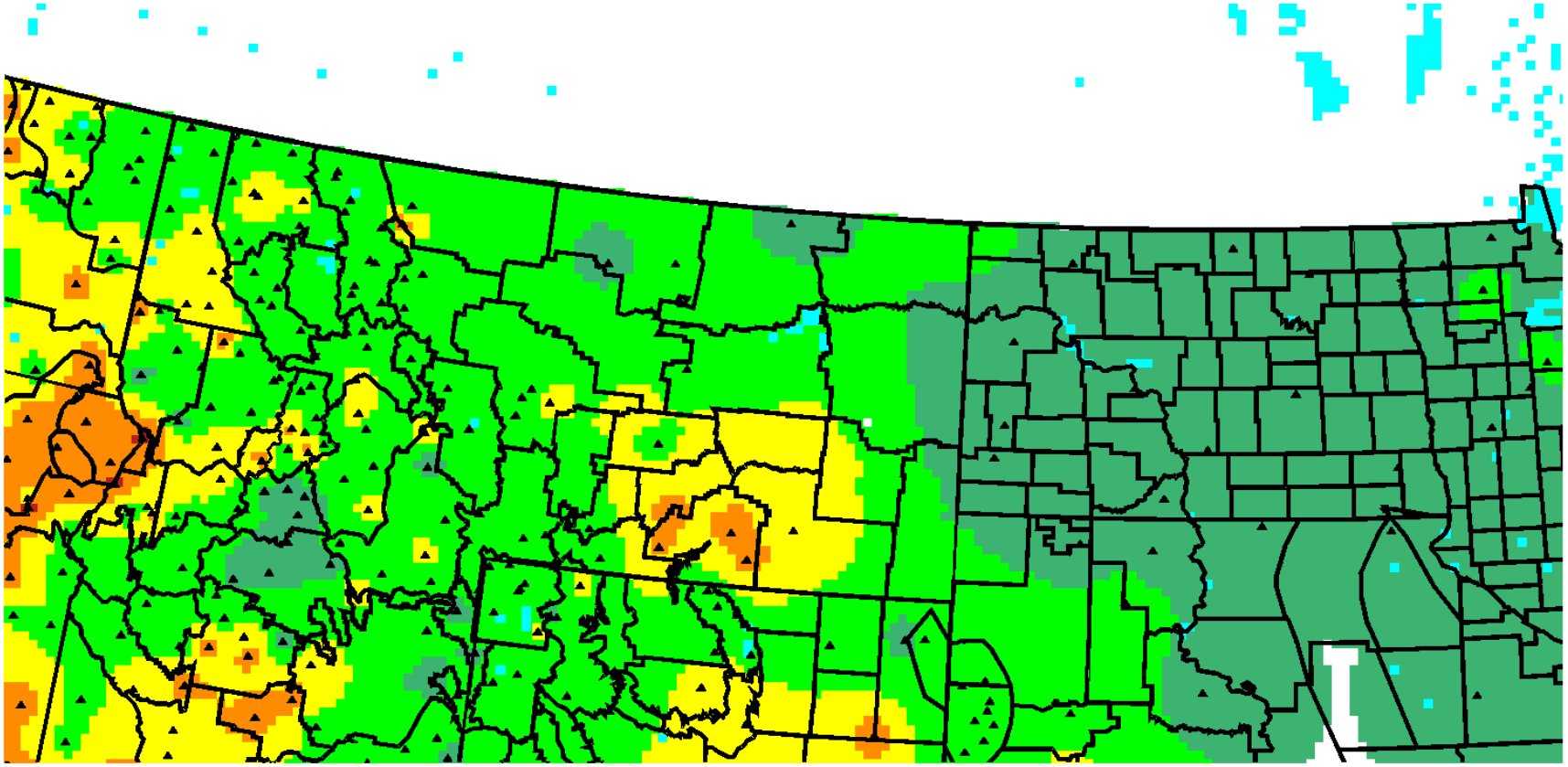
PREDICTIVE SERVICES

NATIONAL INTERAGENCY FIRE CENTER
Boise, Idaho

Map produced by Predictive Services
National Interagency Fire Center
Boise, Idaho
Updated September 17, 2014

Fuels & Fire Behavior Advisories remain in effect for 14 days from the date of issuance. Any Advisory on this map is generally no more than 14 days old.

Northern Rockies Observed Fire Danger Class: 16-SEP-14
(Fire Weather Zones)



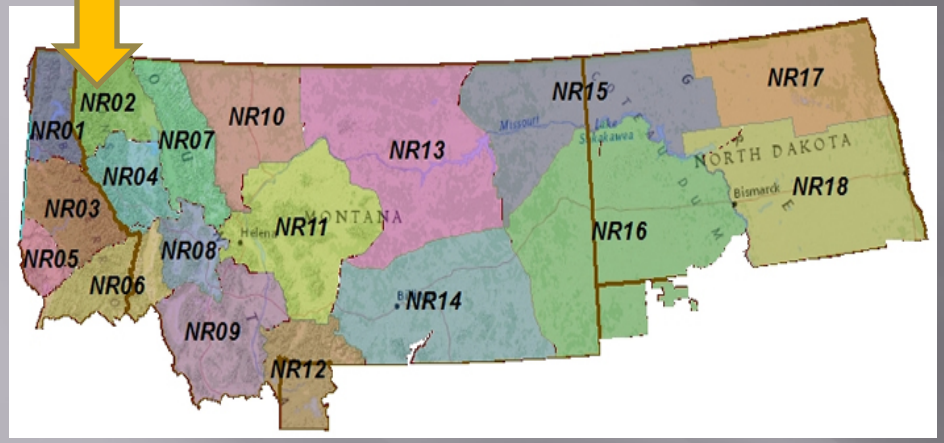
LEGEND

- Low
- Moderate
- High
- Very High
- Extreme
- Water

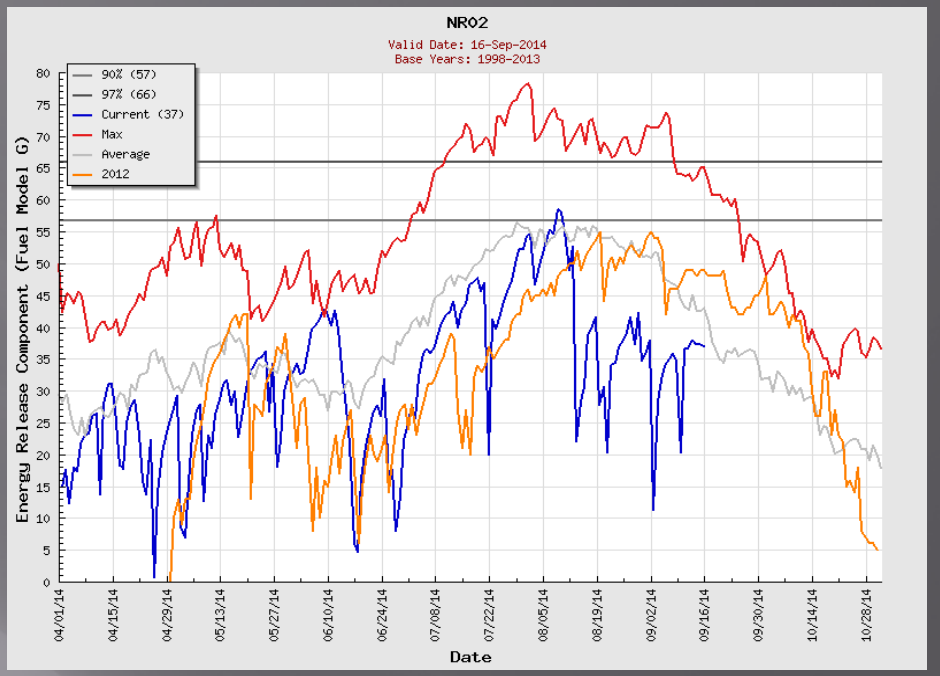
FireLab
MISSOULA, MONTANA

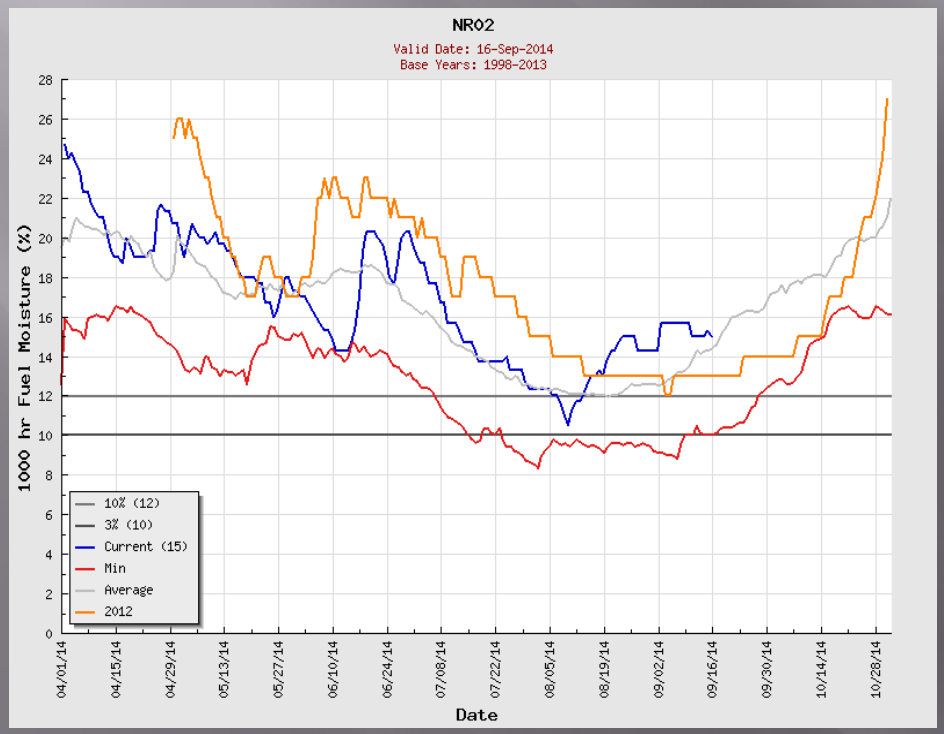
WFAS-MAPS National Interagency Fire Center

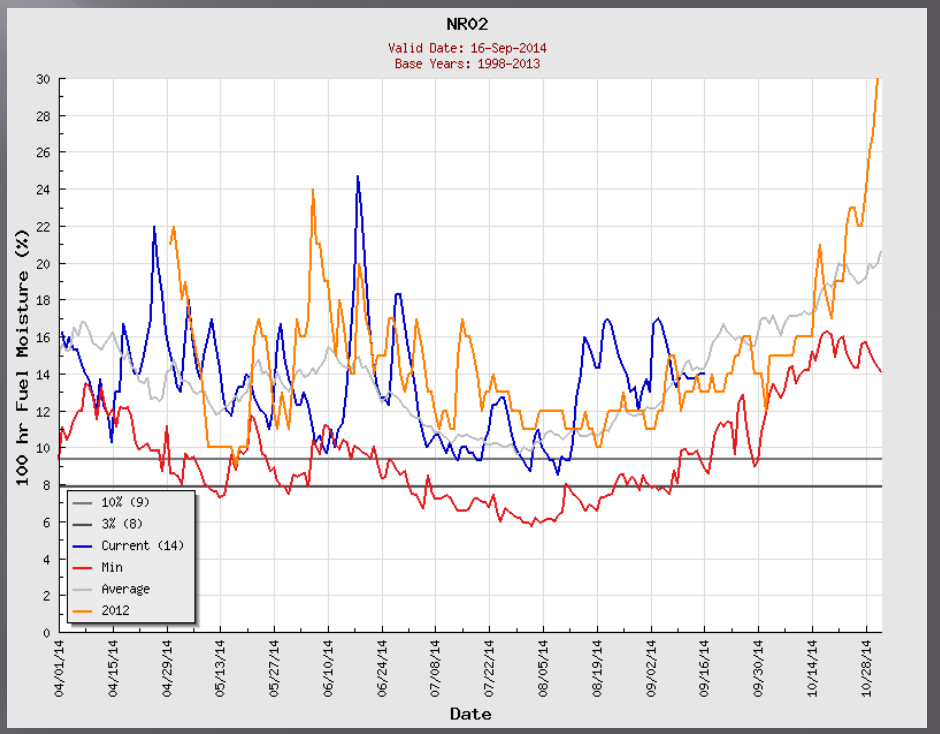
NR02 - Northwestern Montana



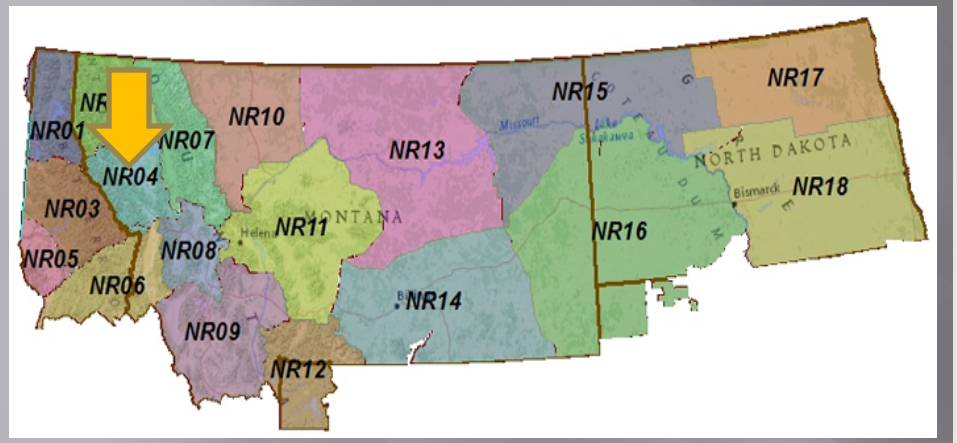
Libby Ranger Station
Troy Ranger Station
Eureka Ranger Station





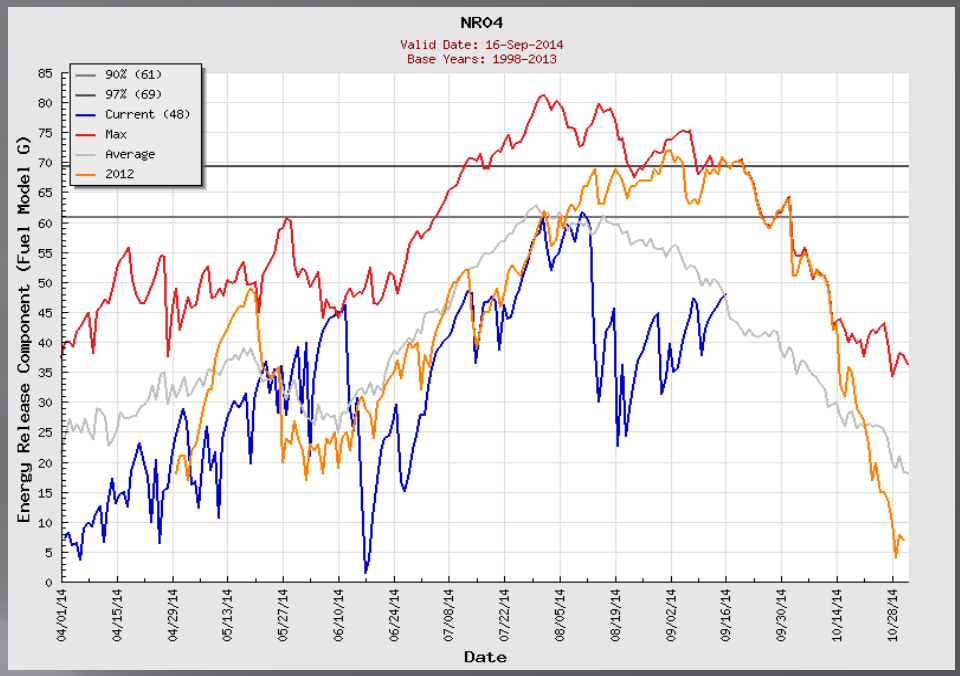


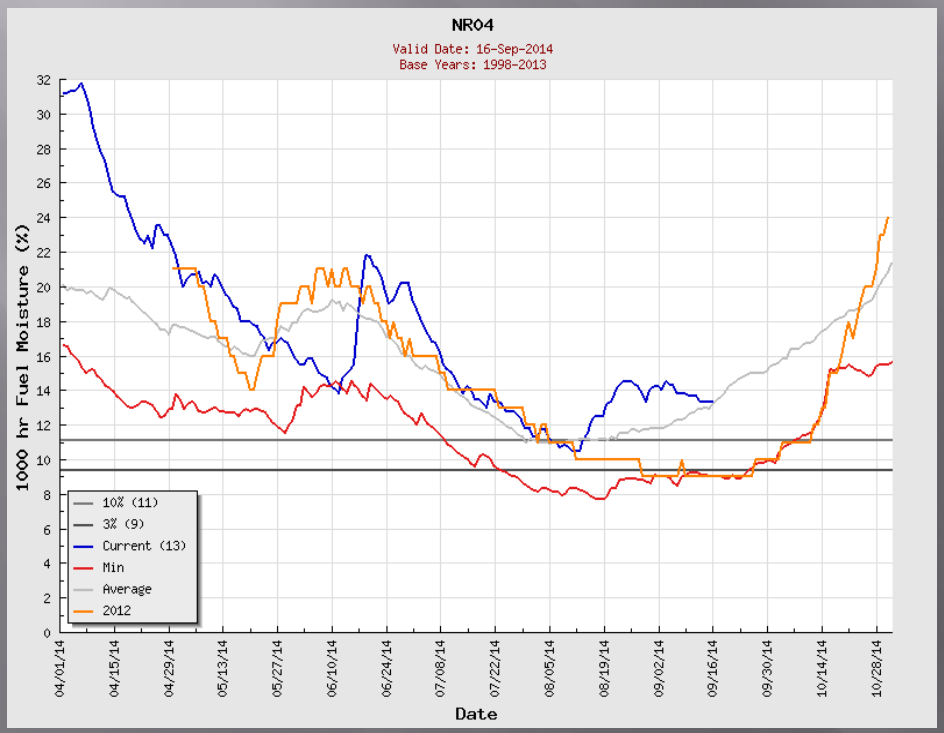
NR04 – Western Montana

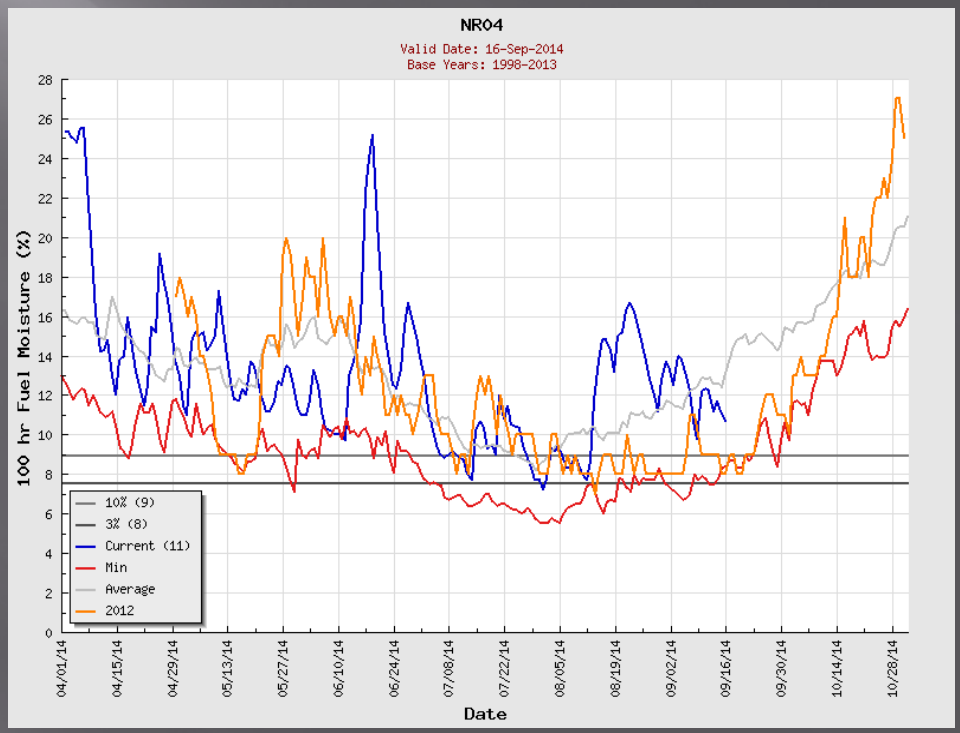


Plains
Missoula
St. Regis

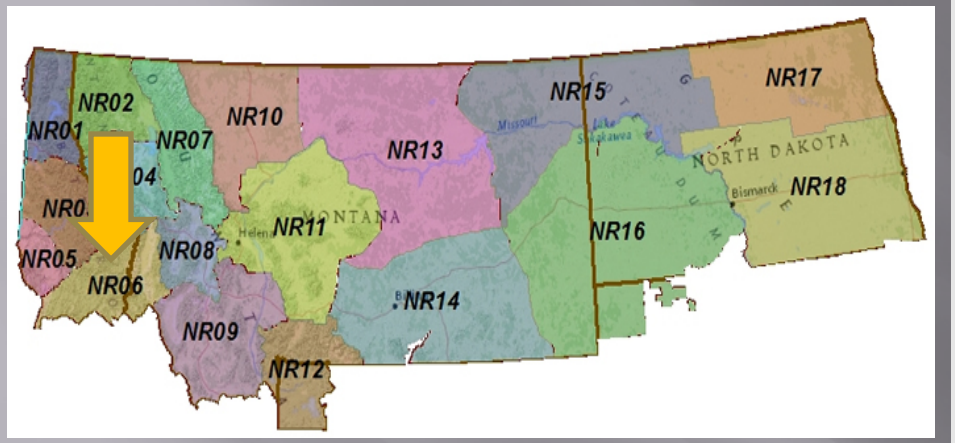
Hot Springs
Nine Mile





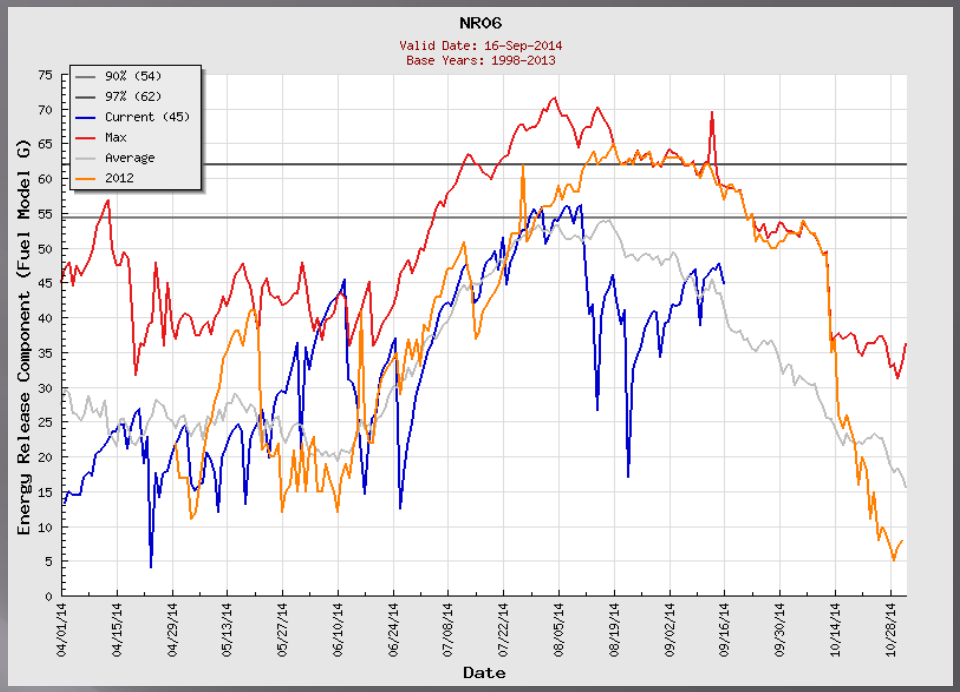


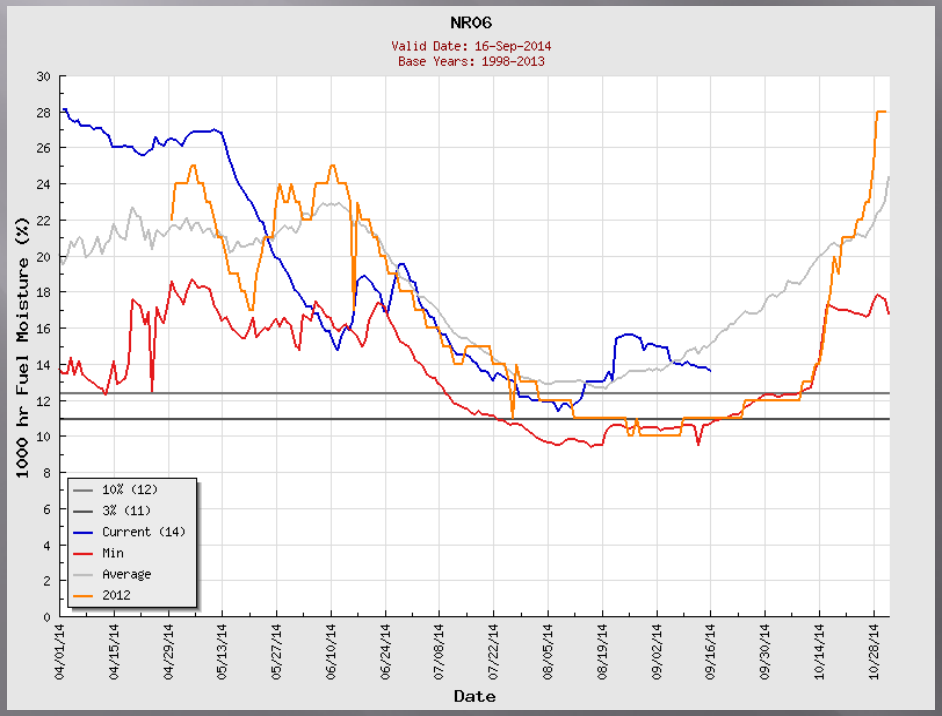
NR06 – North Central Idaho and Bitterroot/Sapphire Mtns

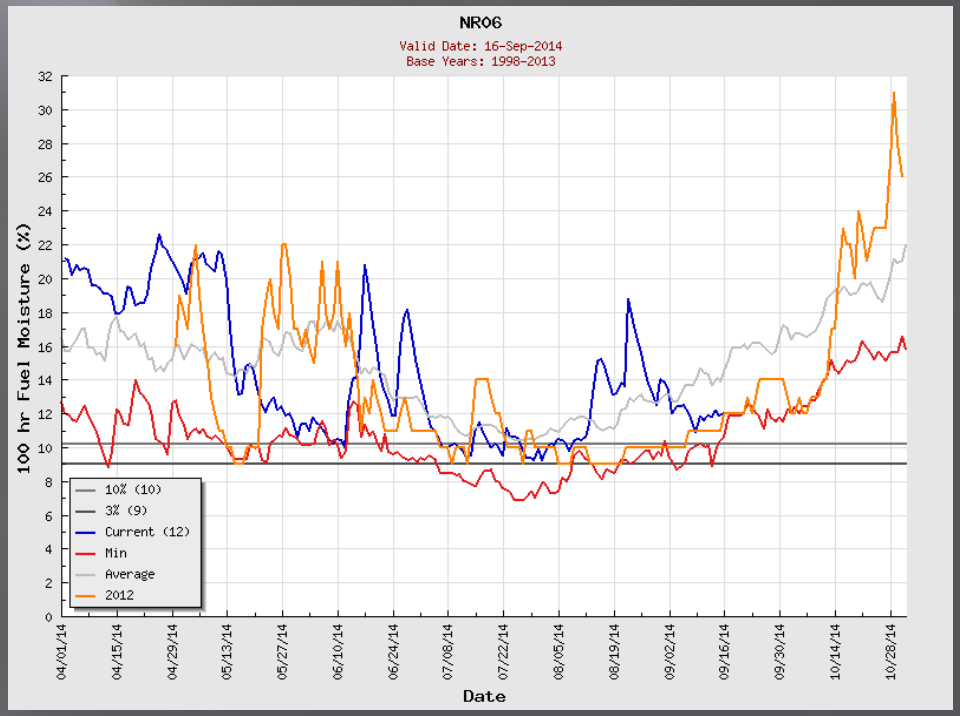


Fenn
Powell
Stevi

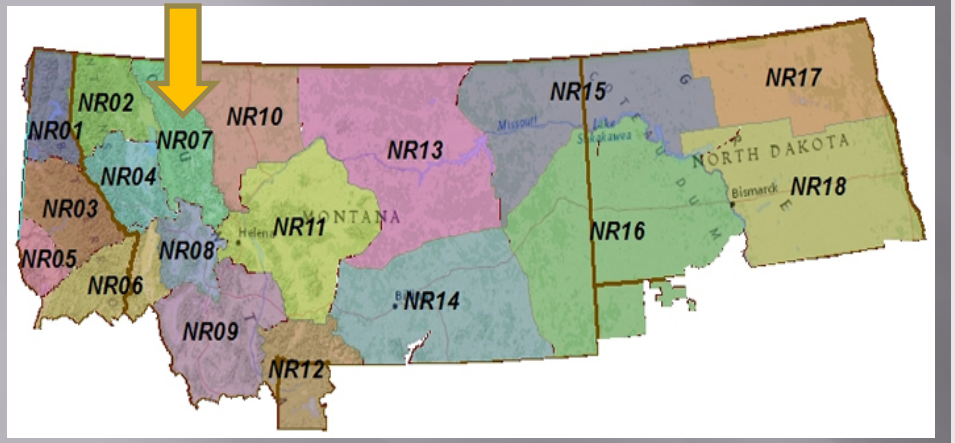
Moose Creek
Red River
West Fork



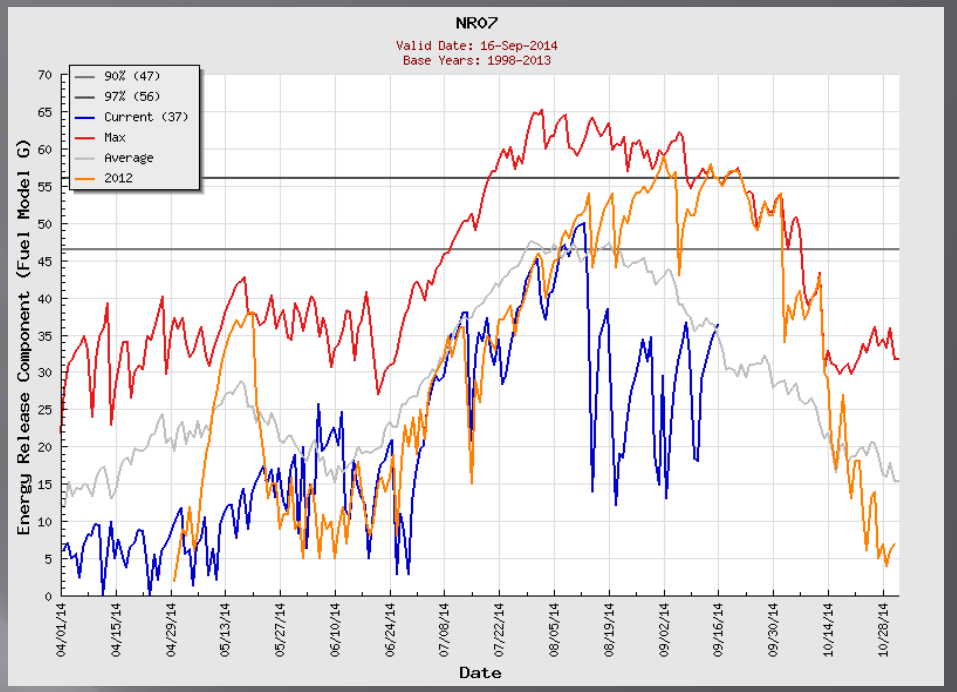


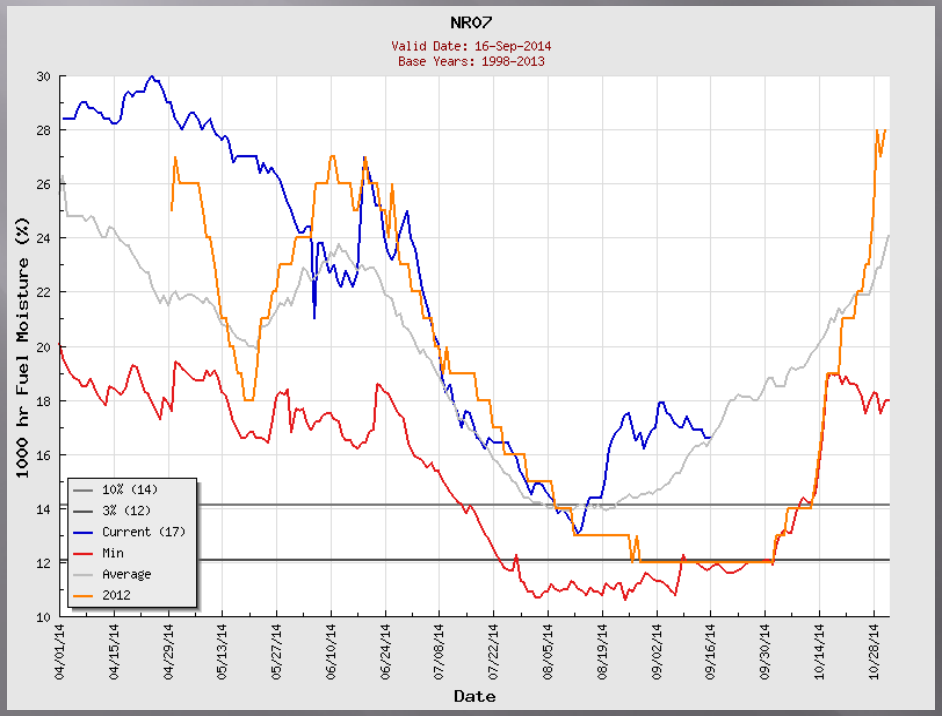


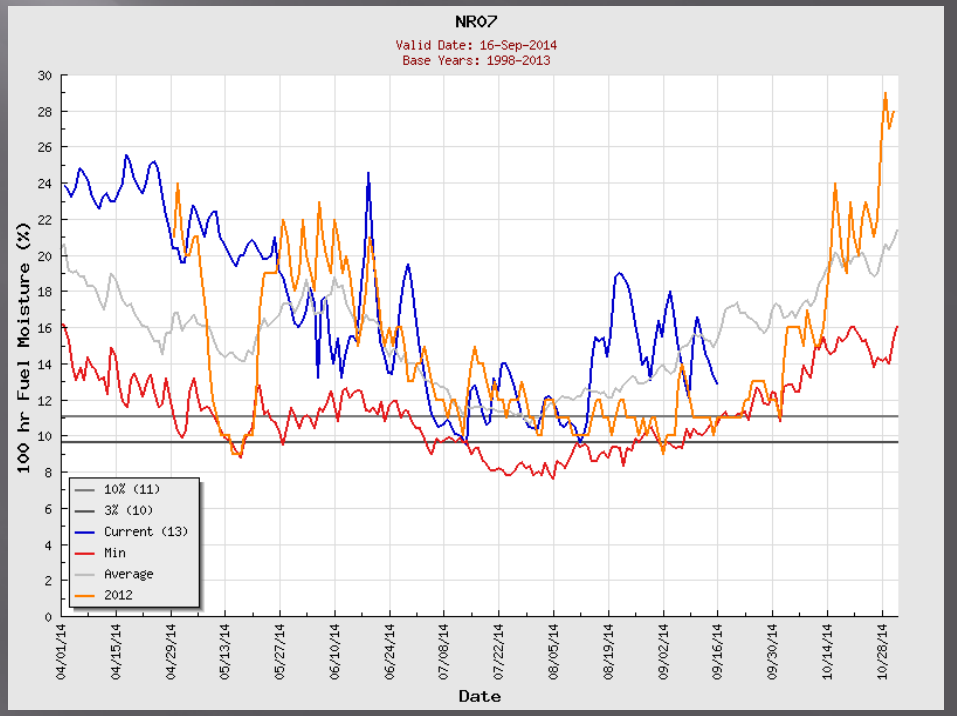
NR07 - Glacier National Park and Wilderness Areas



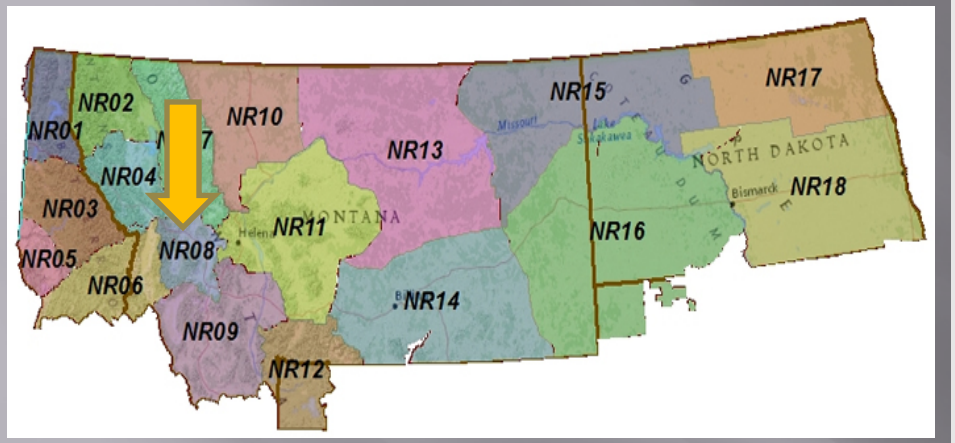
West Glacier
Cyclone
Condon Work Center
Hungry Horse
Benchmark



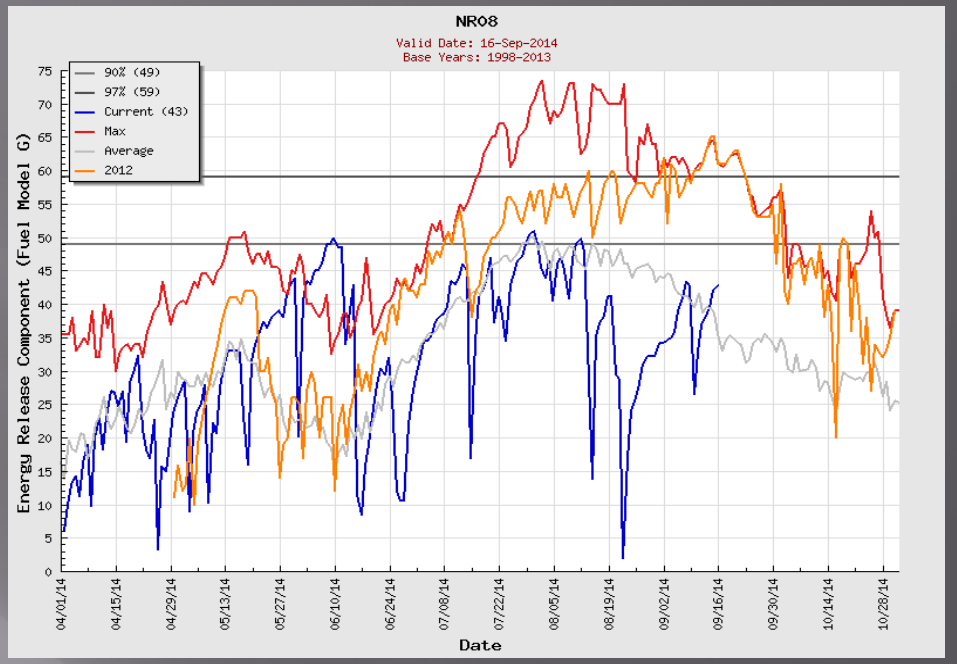


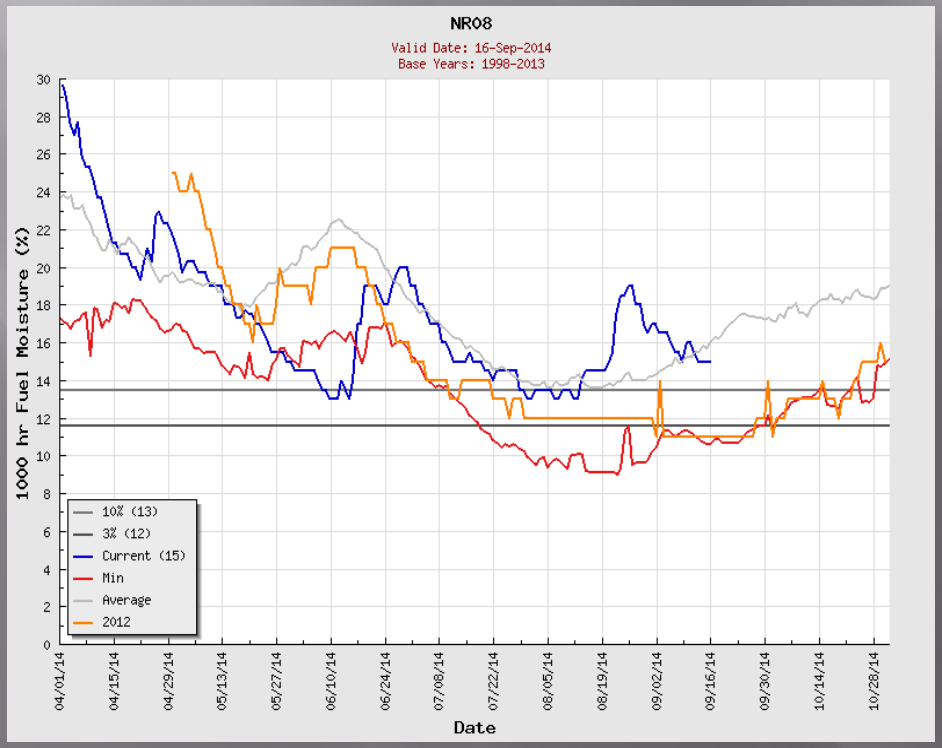


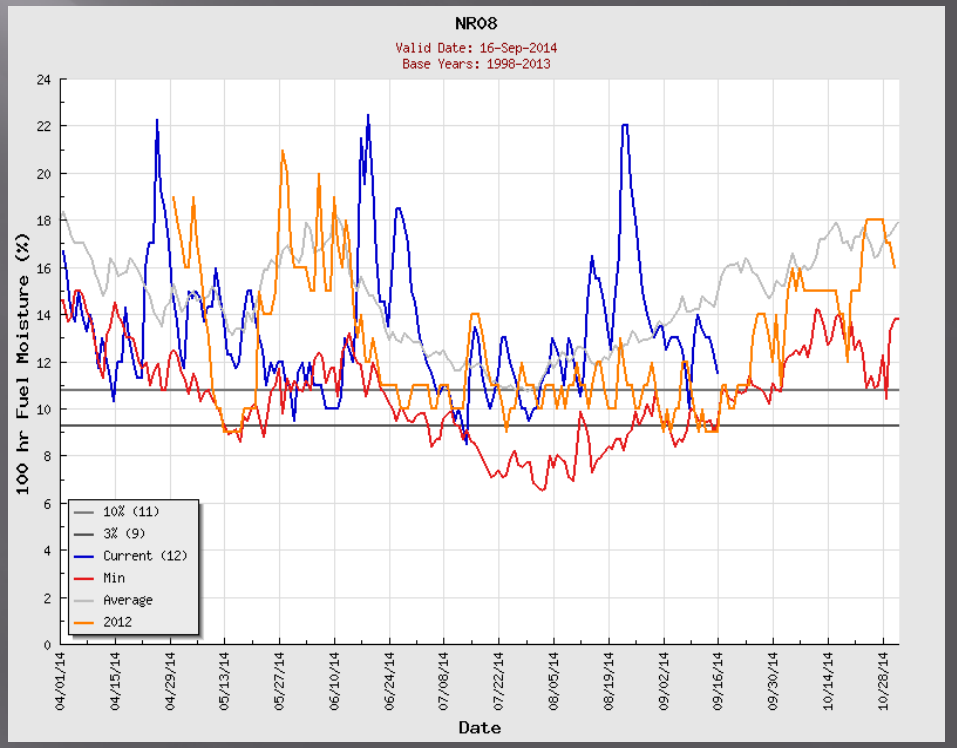
NR08 – Southwest Montana, West of Continental Divide



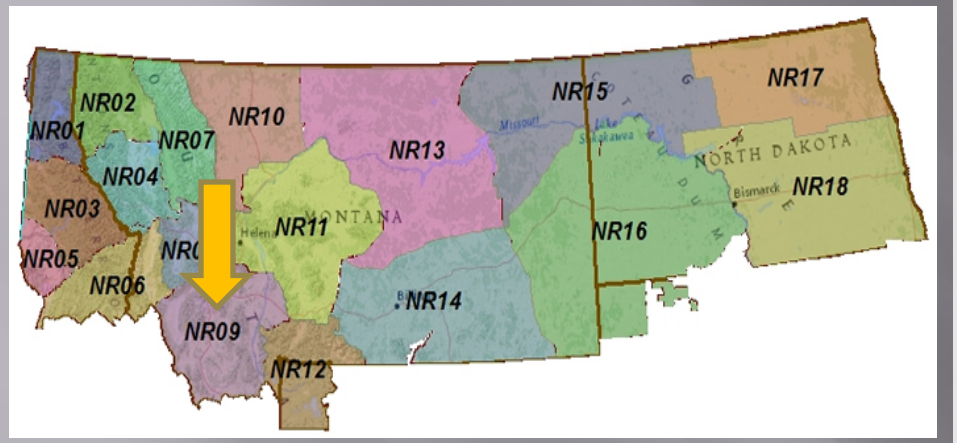
Lincoln
Phillipsburg





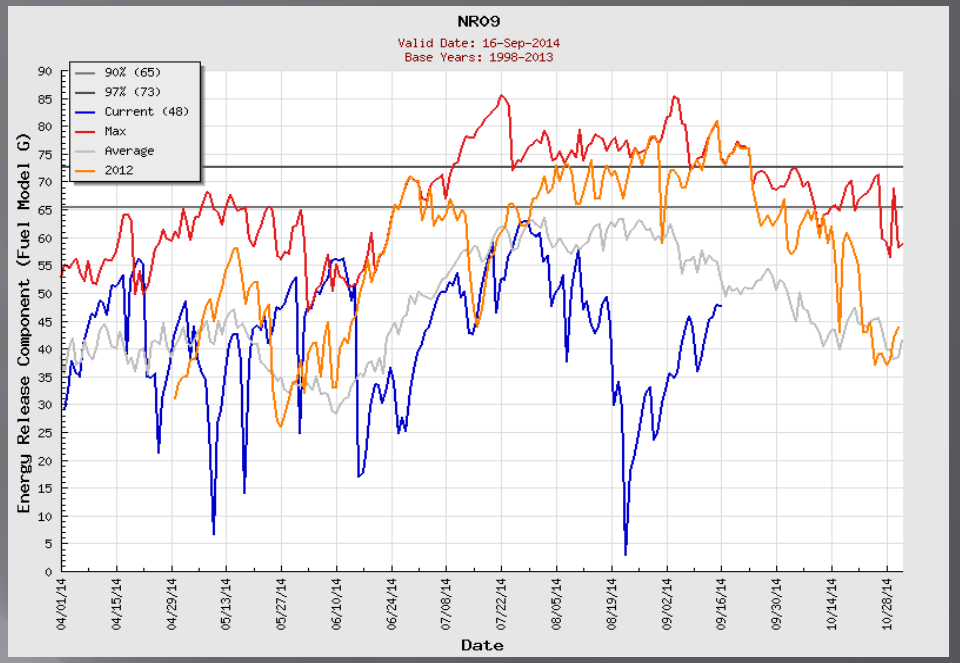


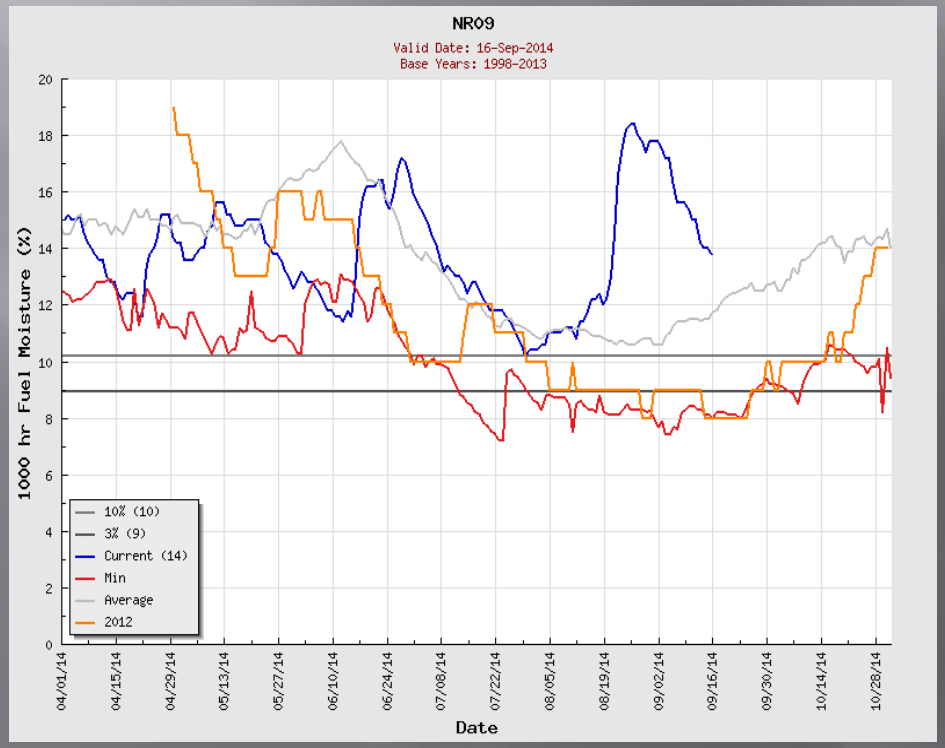
NR09 – Big Hole, Southwest Montana East of Continental Divide

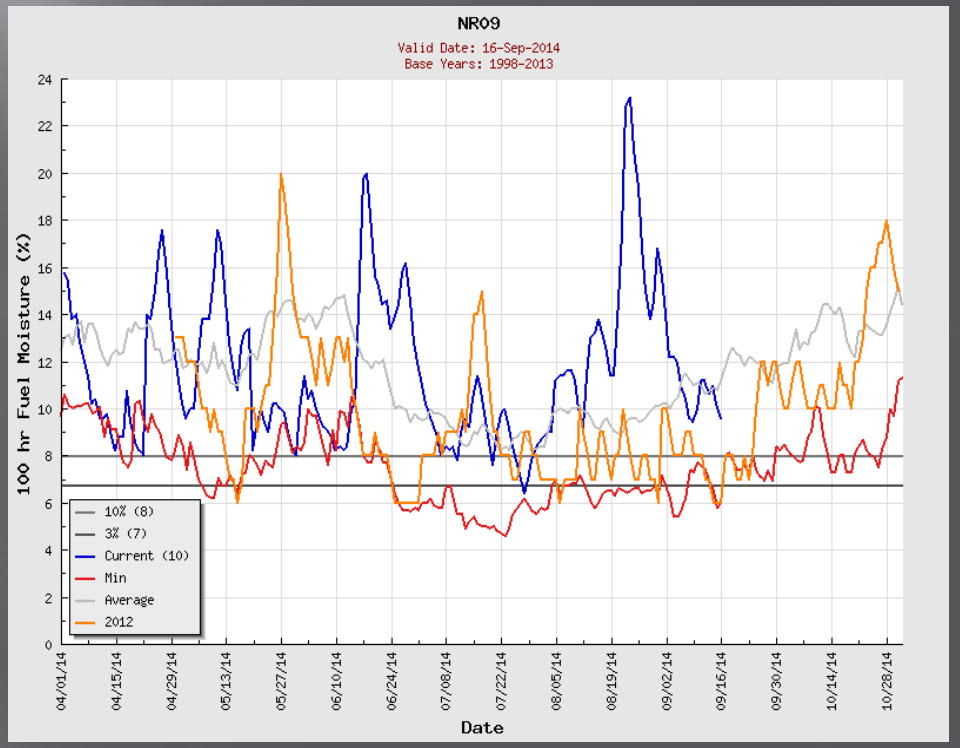


Jefferson
Brenner

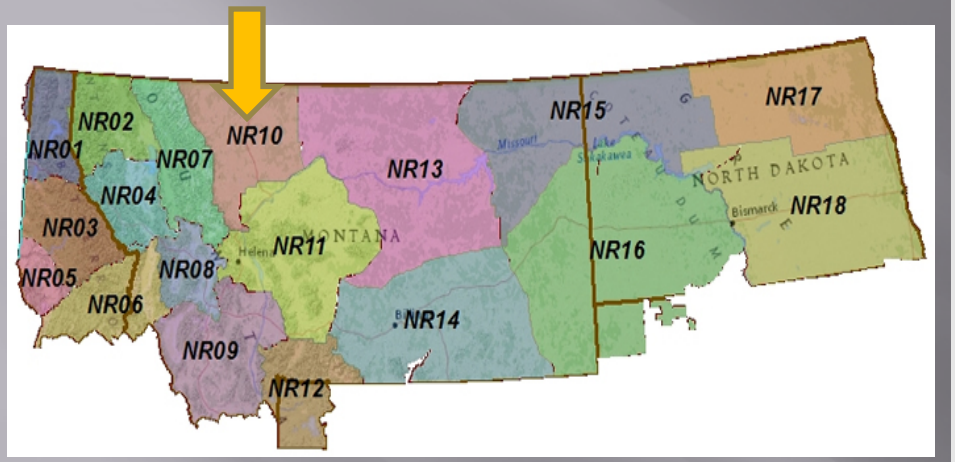
Ennis
Wise RIver



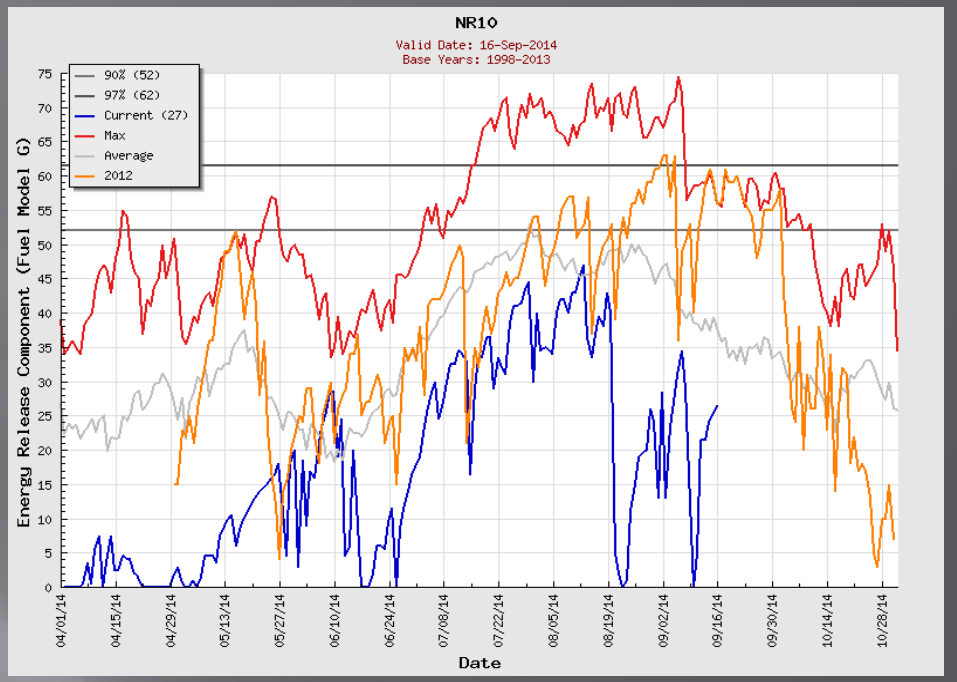


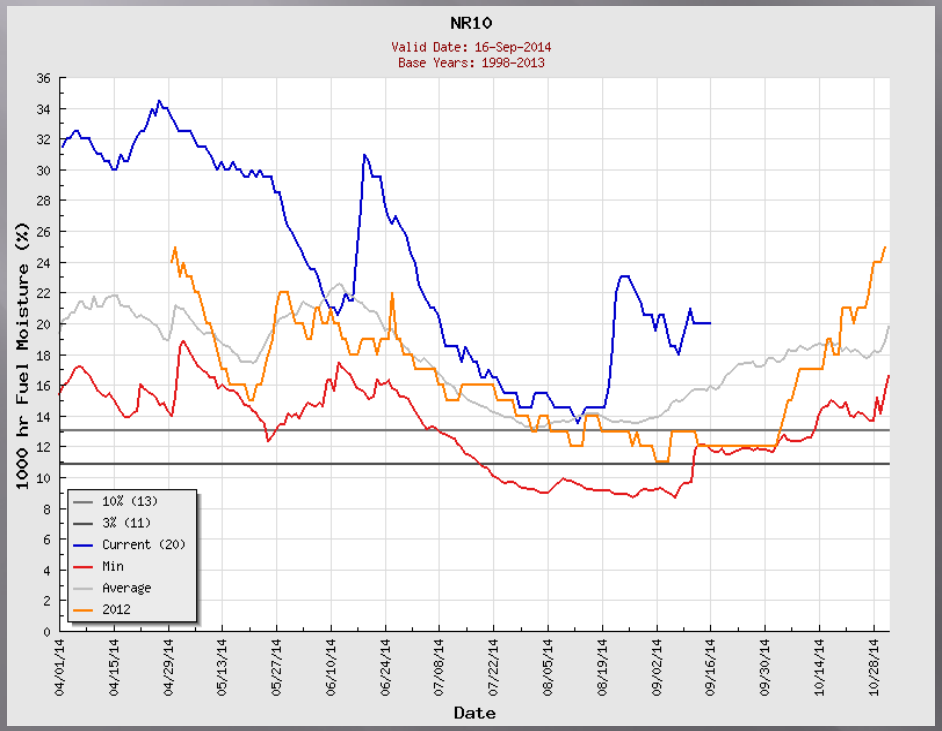


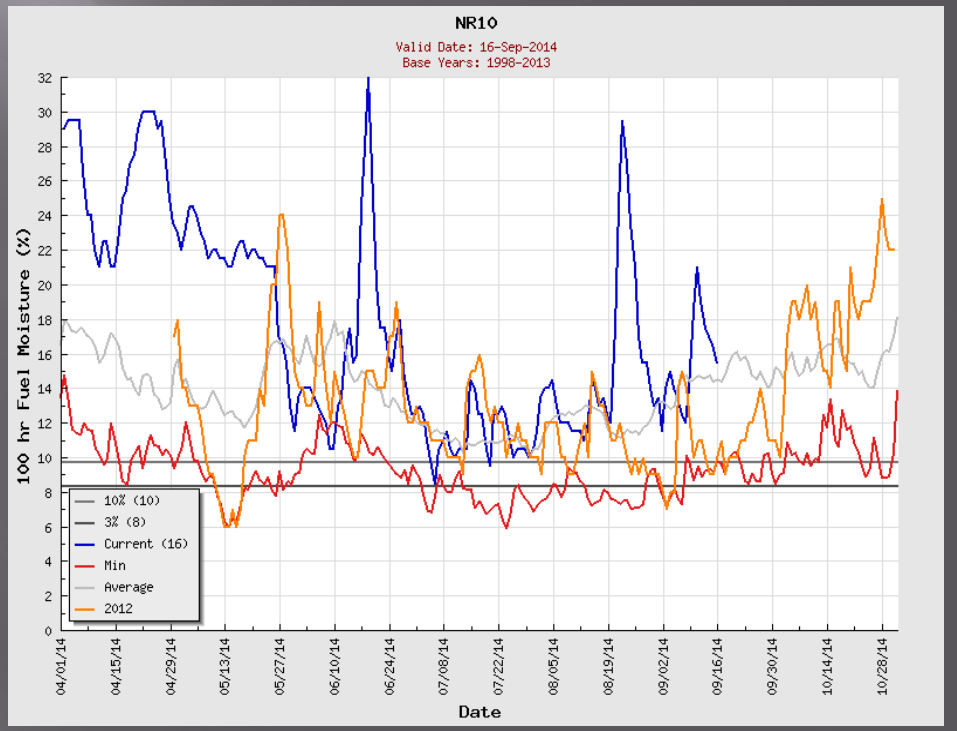
NR10 – Northern Front Range



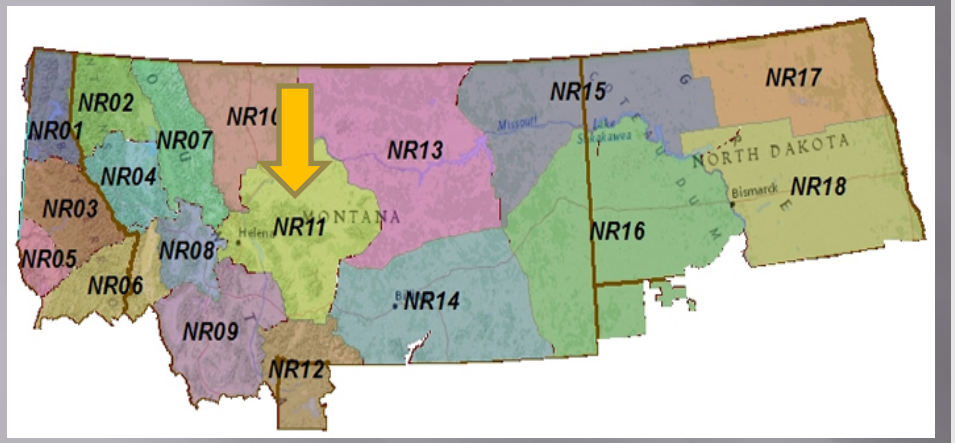
St. Mary
Gleason



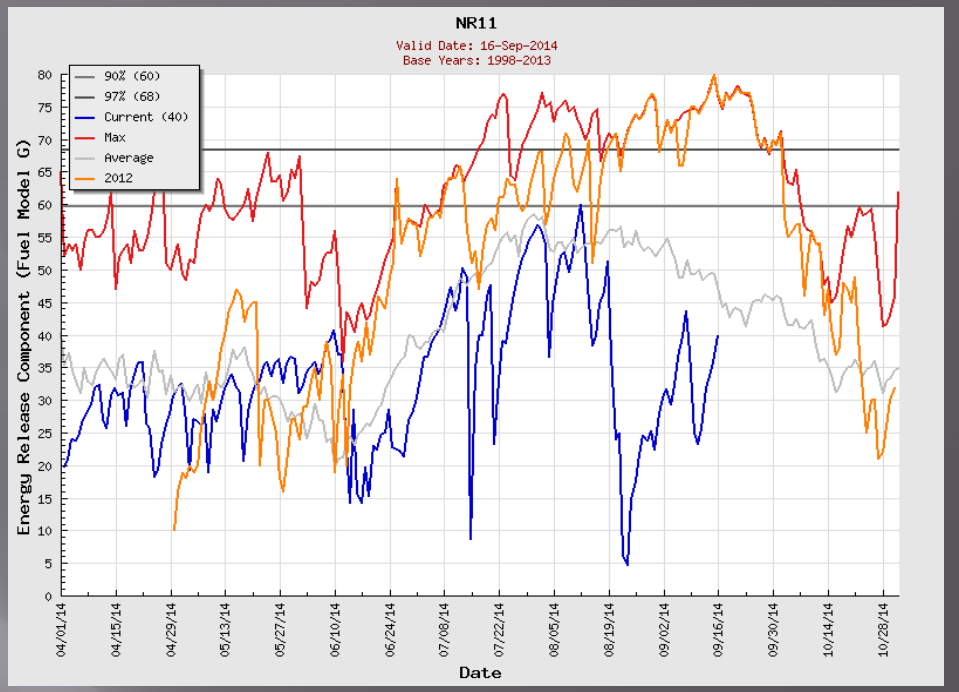


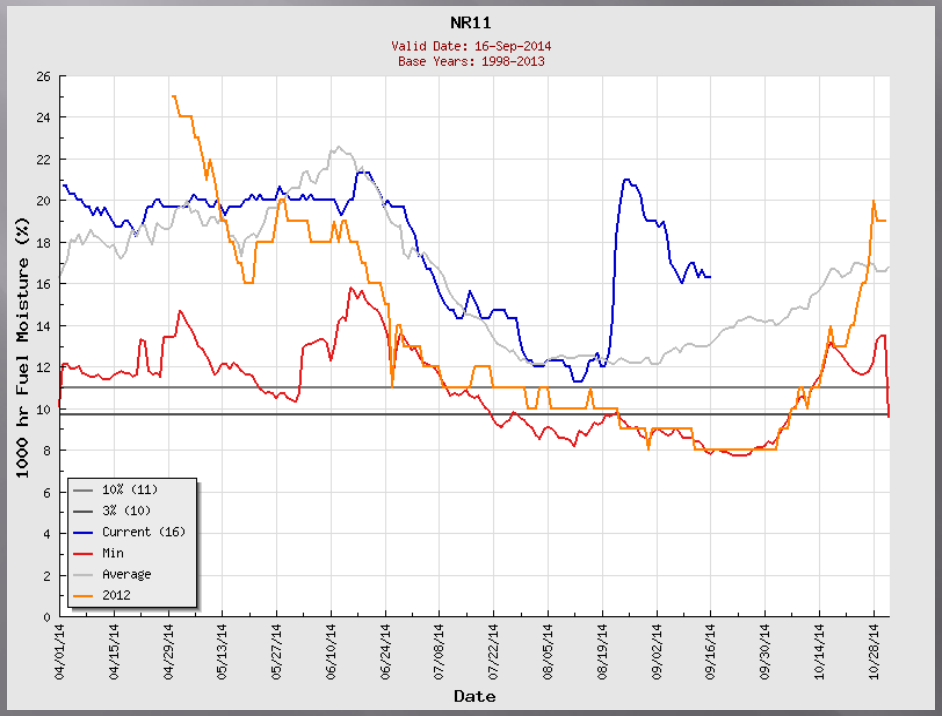


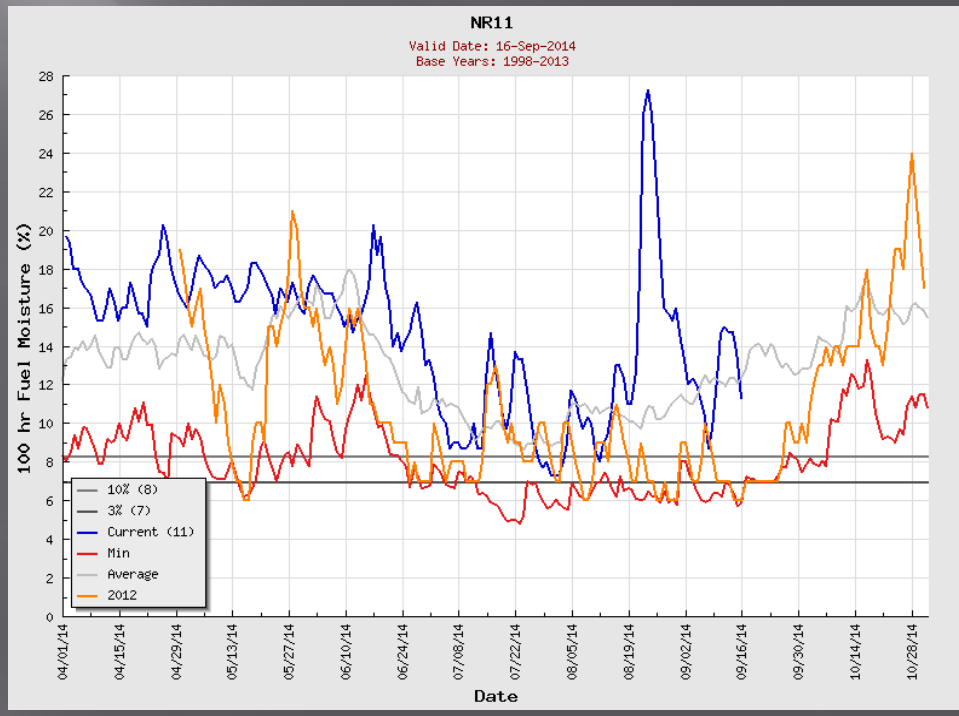
NR11 – West Central Montana



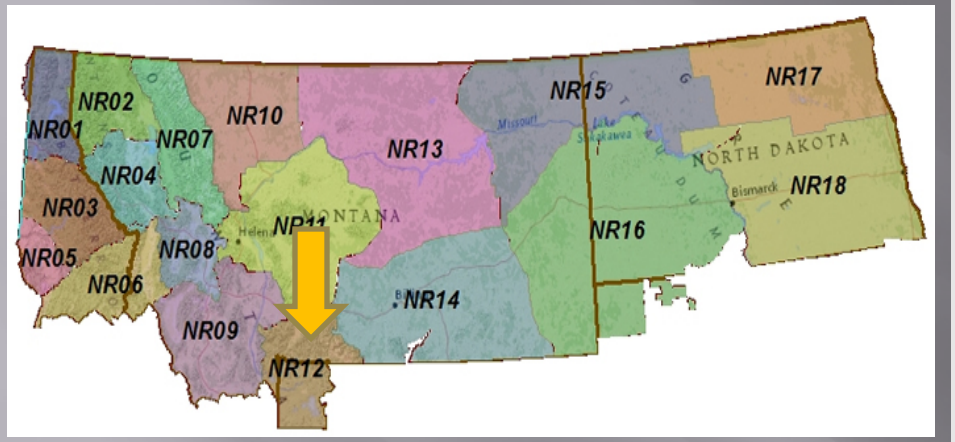
Helena
Porphyry
White Sulphur Springs



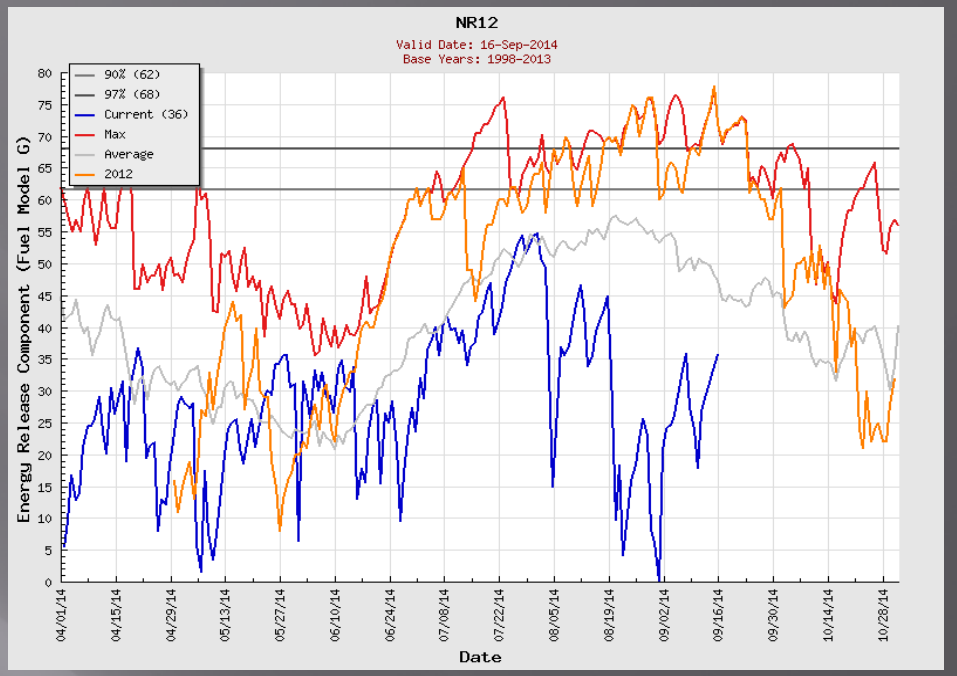


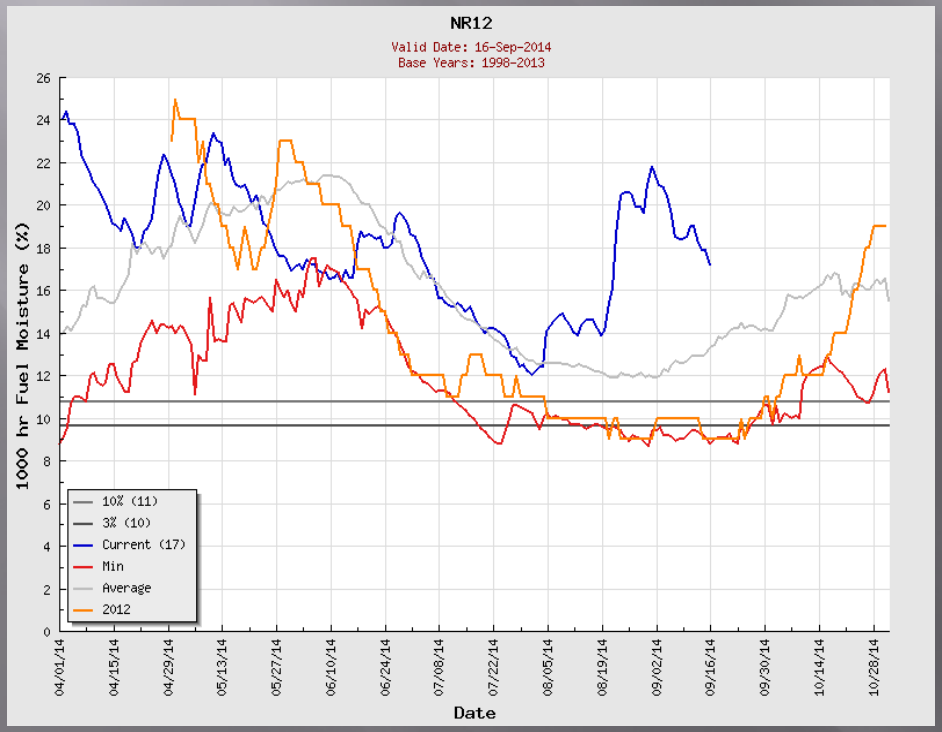


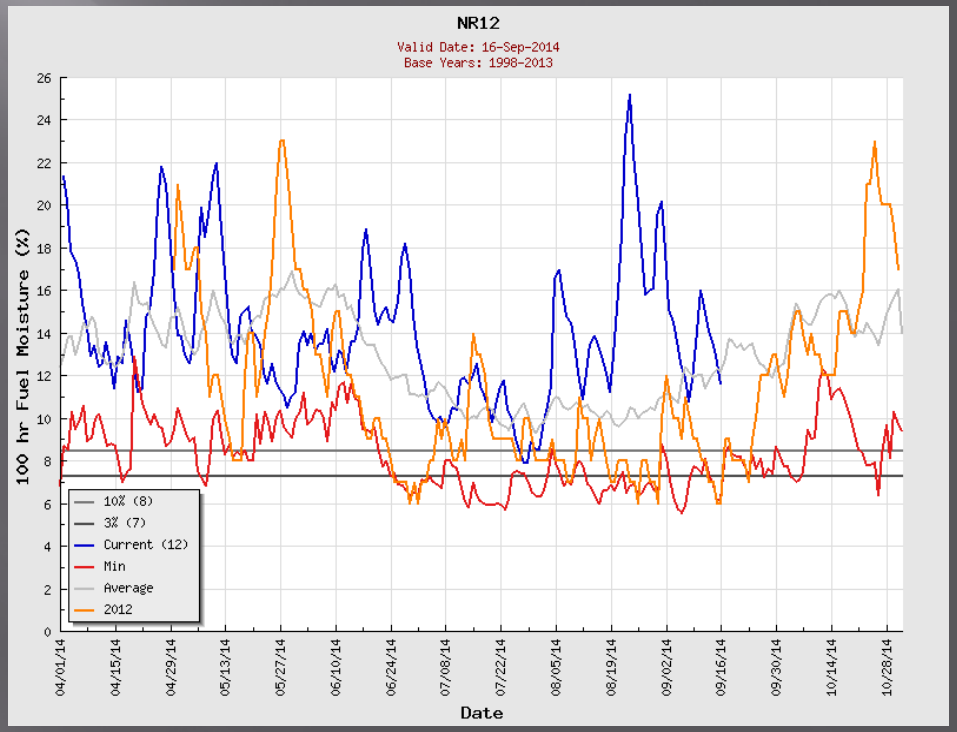
NR12 – South Central Montana and Yellowstone YP



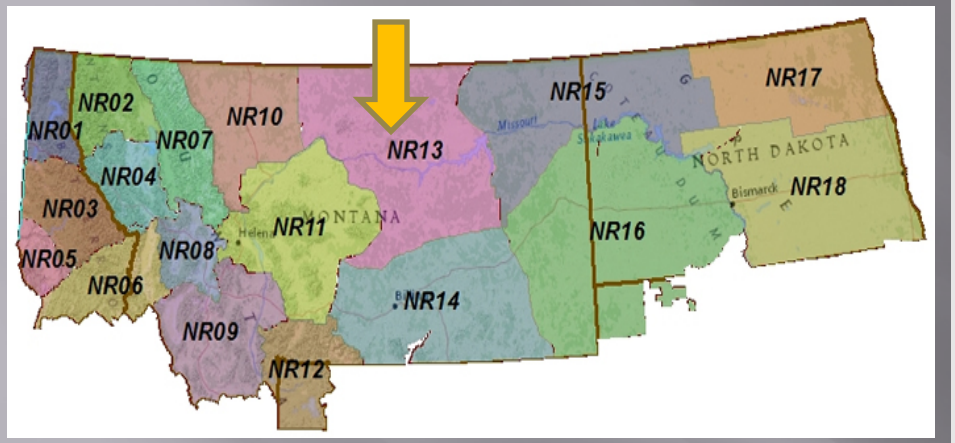
Shenango
Fishtail
Bechler
Hebgen Lake
Timbercrest
Quadrant



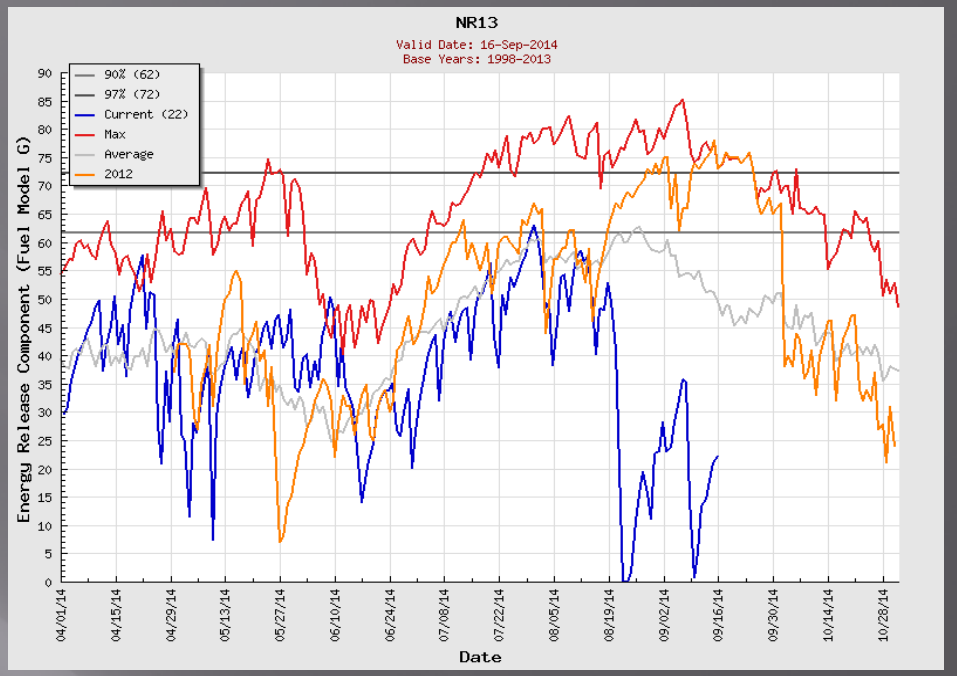


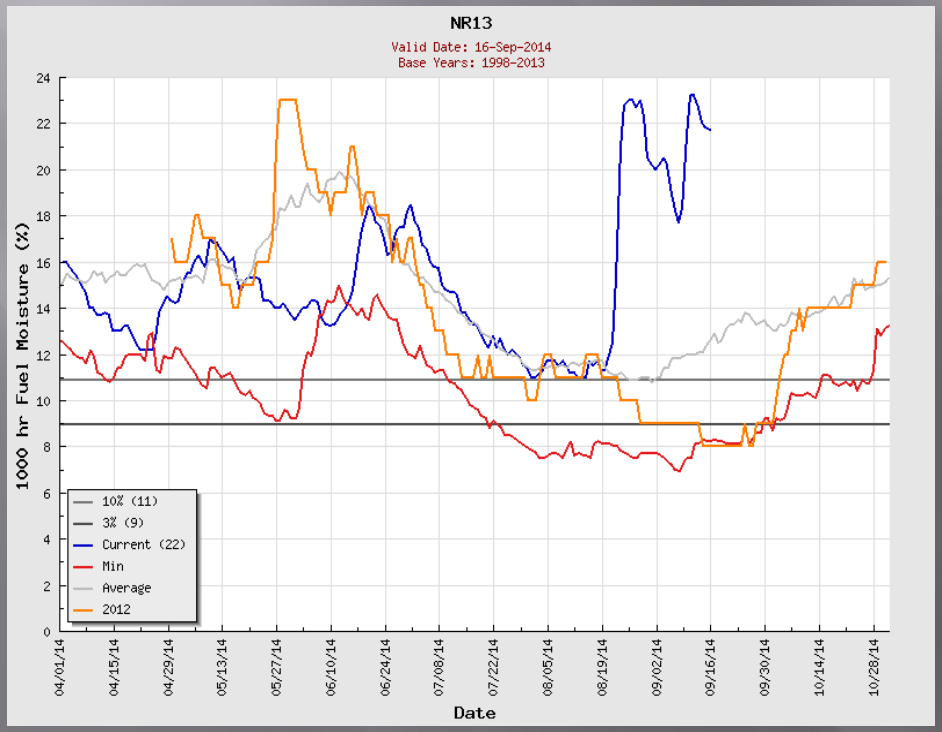


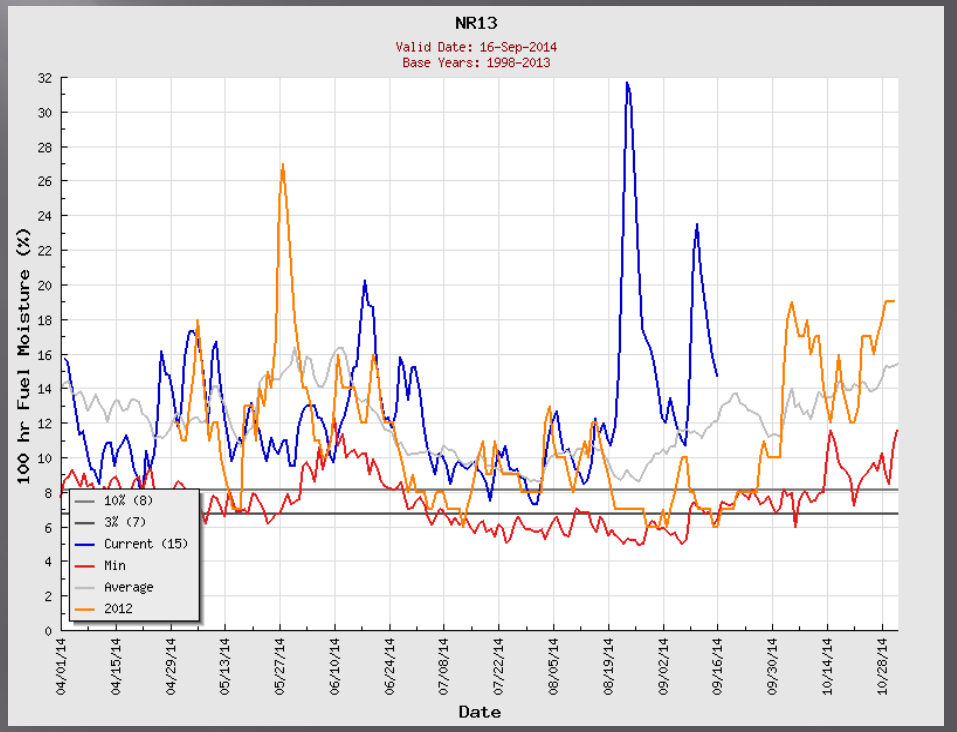
NR13 – Northern Plains and Missouri Breaks



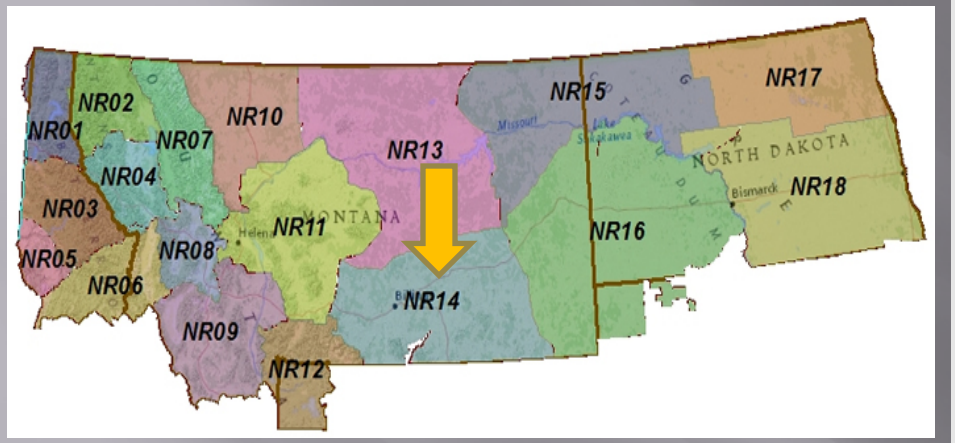
Rocky Boy
Bluff Creek
Armells Creek
Little Bullwhacker
King Coulee
South Sawmill Creek



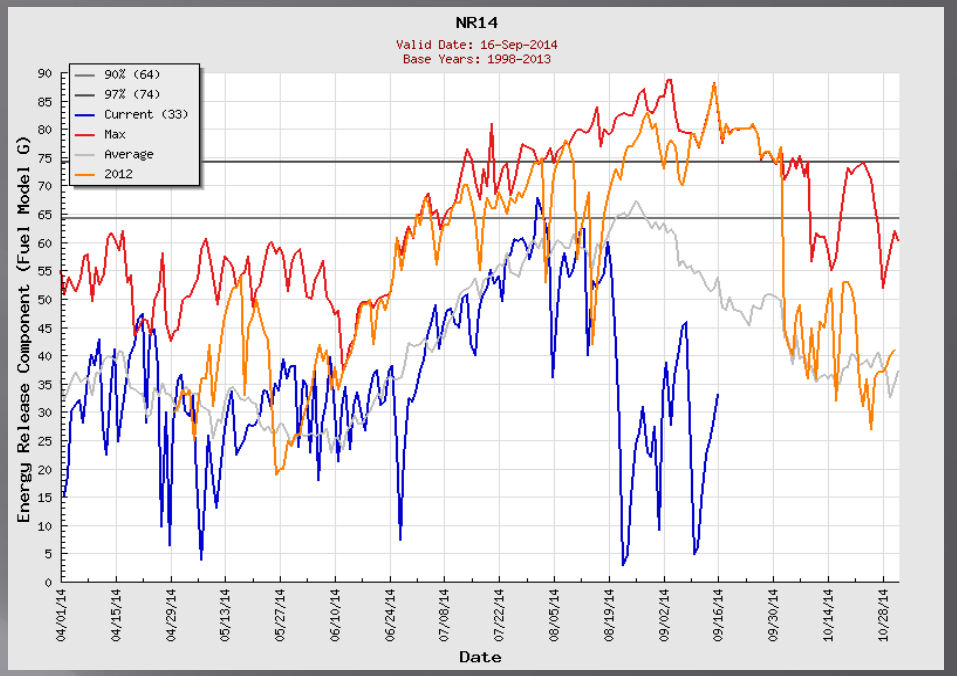


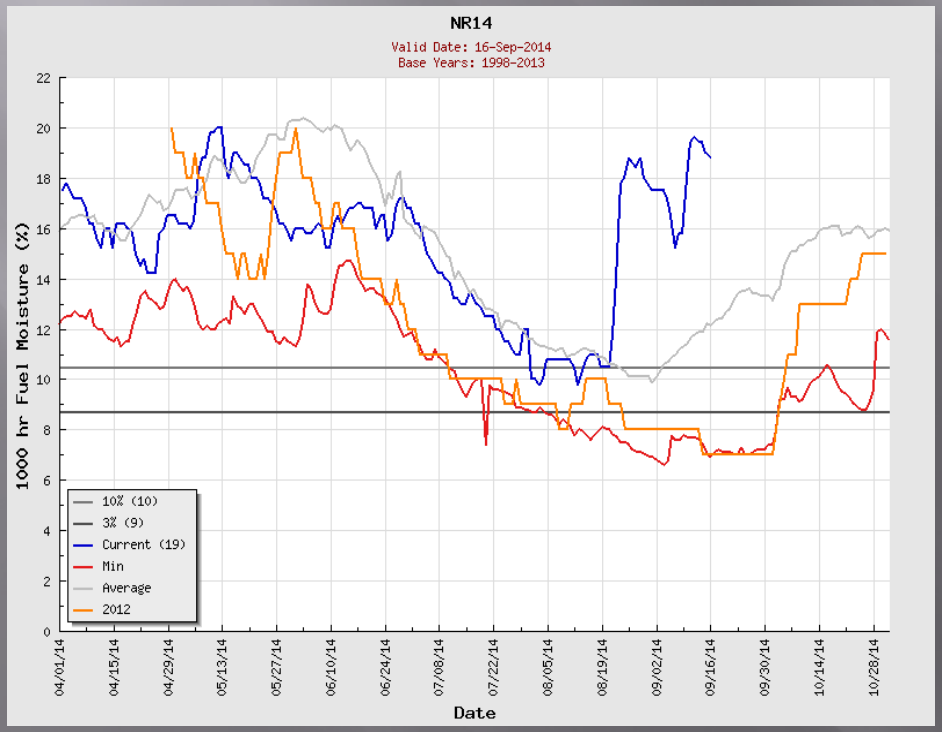


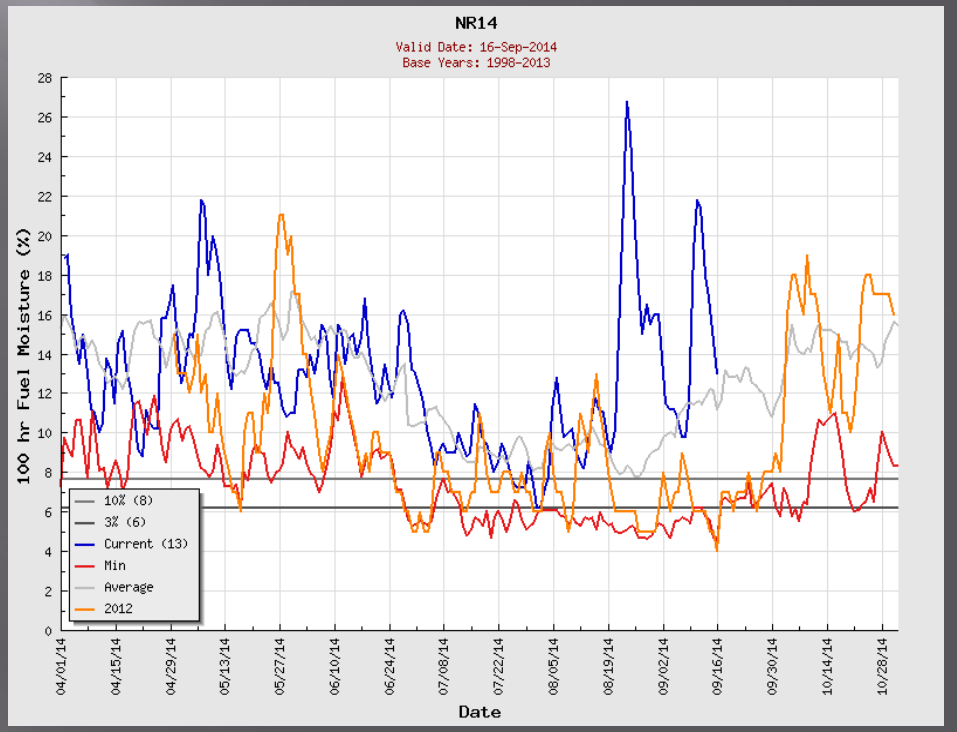
NR14 – Southern Montana (Big Horn/Powder River)



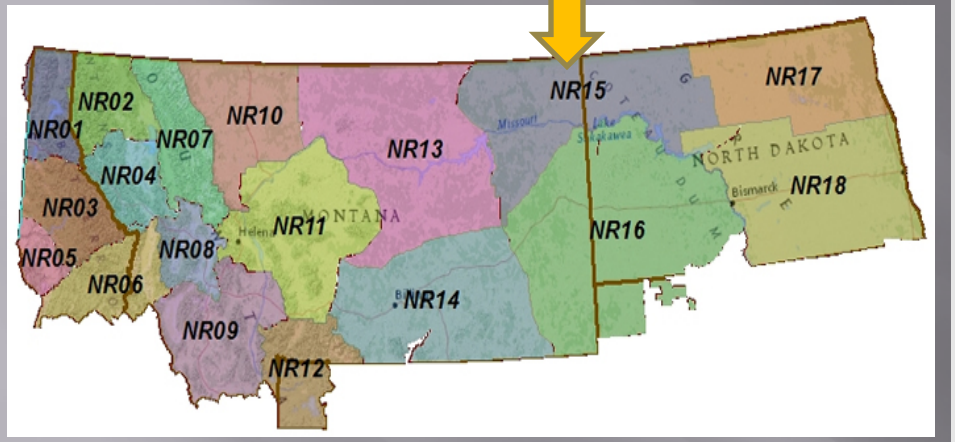
Wolf Mountain
Bighorn Mountain
Fort Howes
Pryor Mountain
Badger Peak



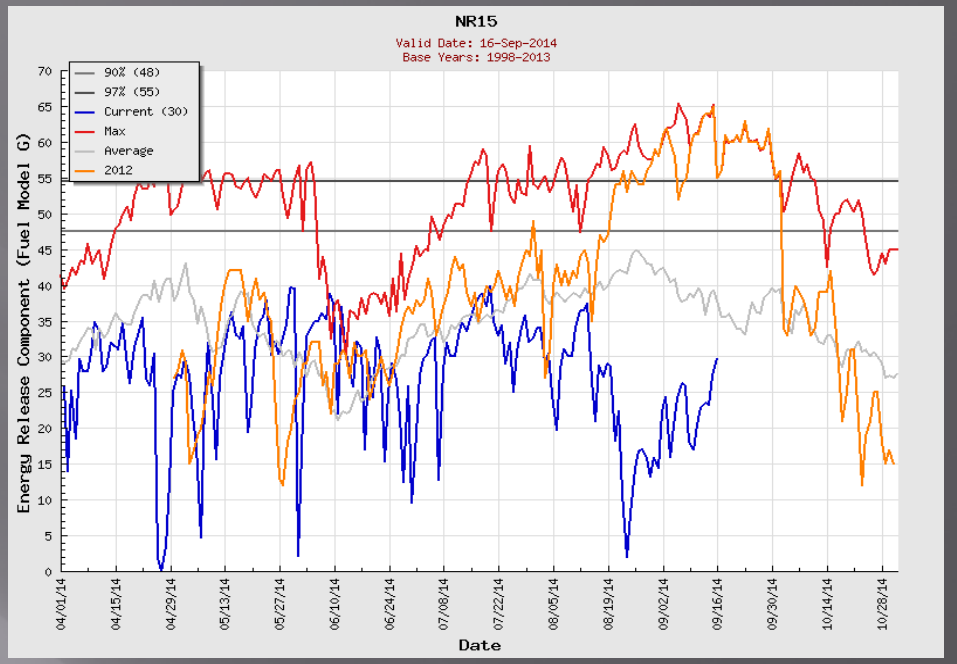


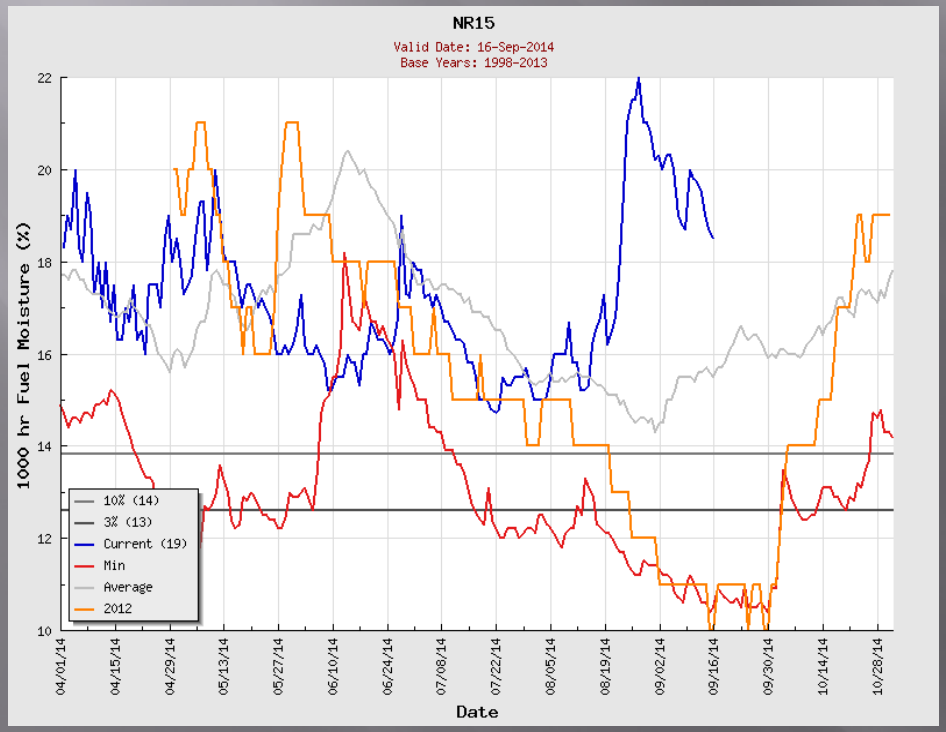


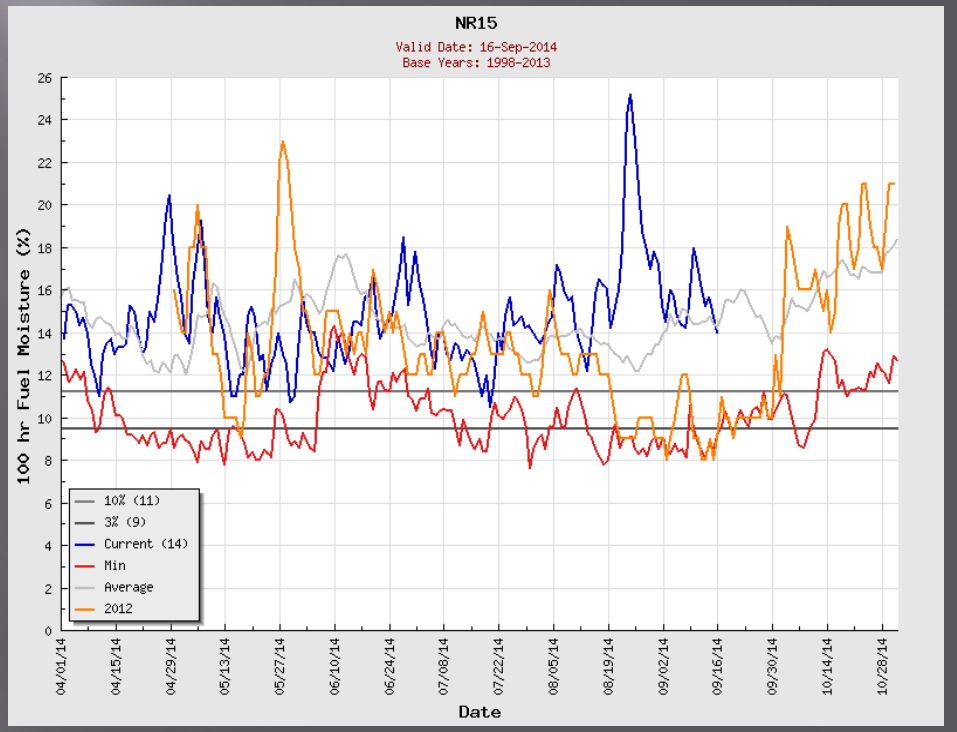
NR15 – Northeast Montana/Northwest North Dakota



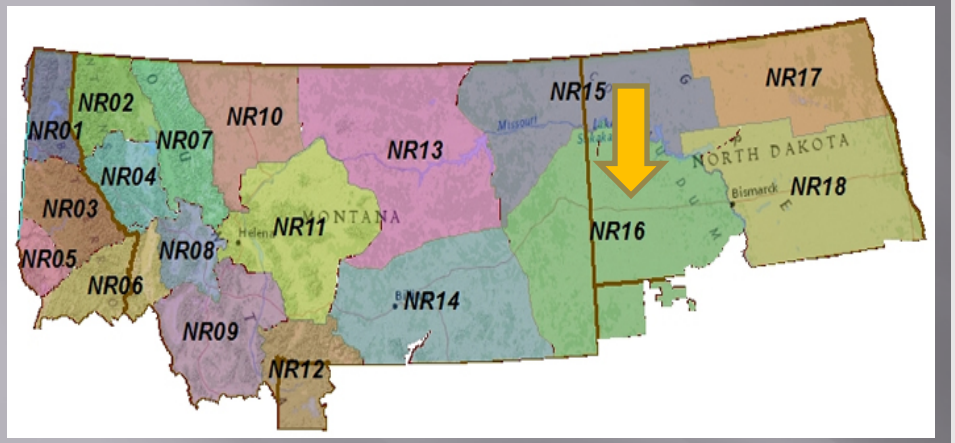
Poplar
Lostwood
Crosby
Watford City





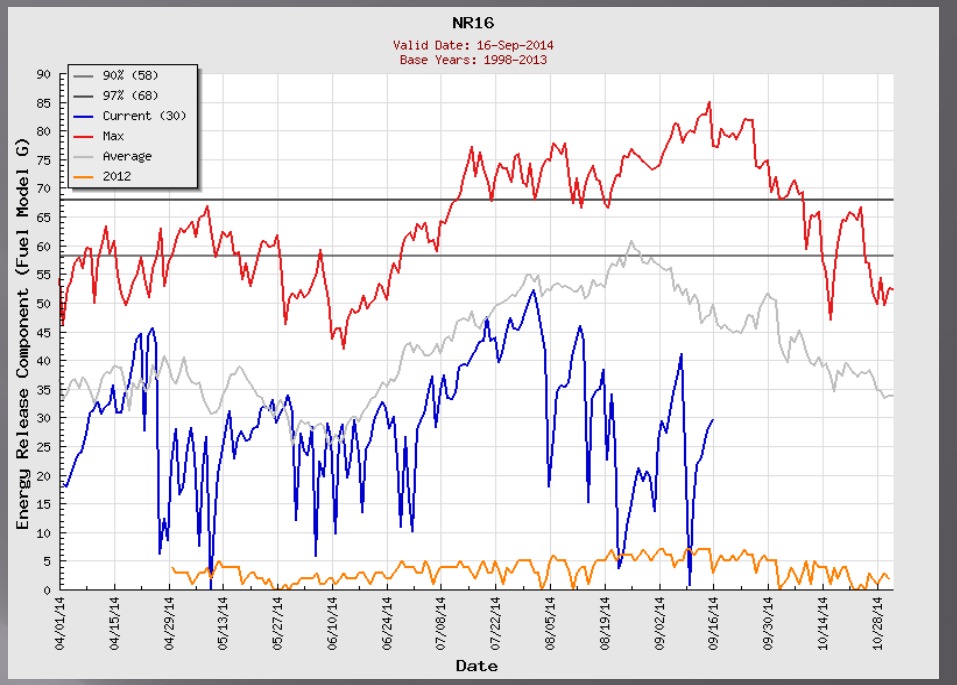


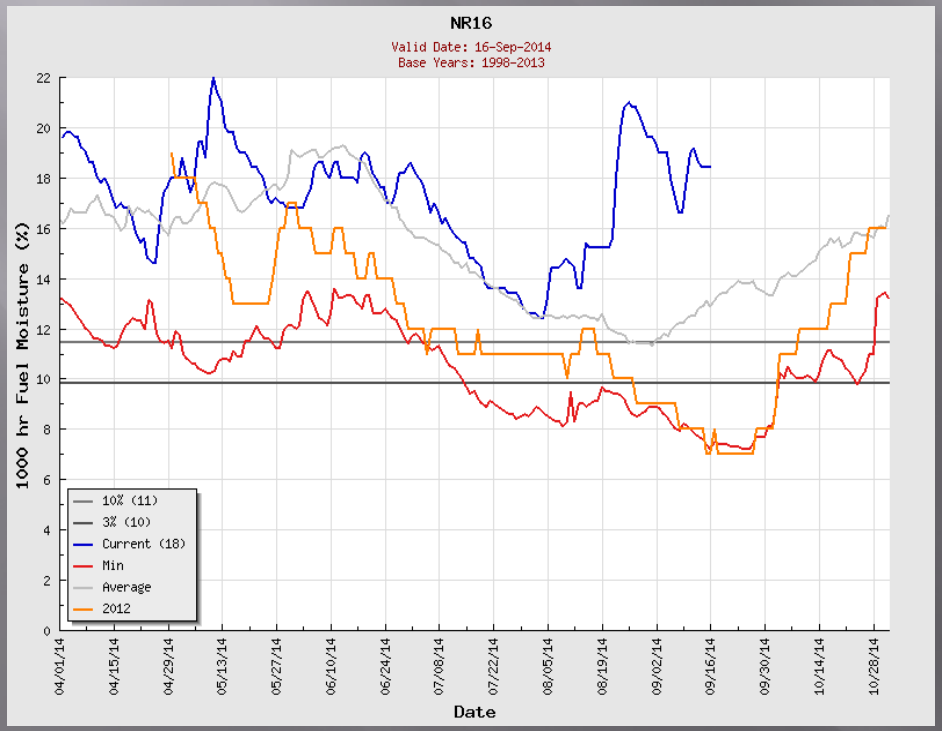
NR16 – Southeastern Montana/Southwestern South Dakota

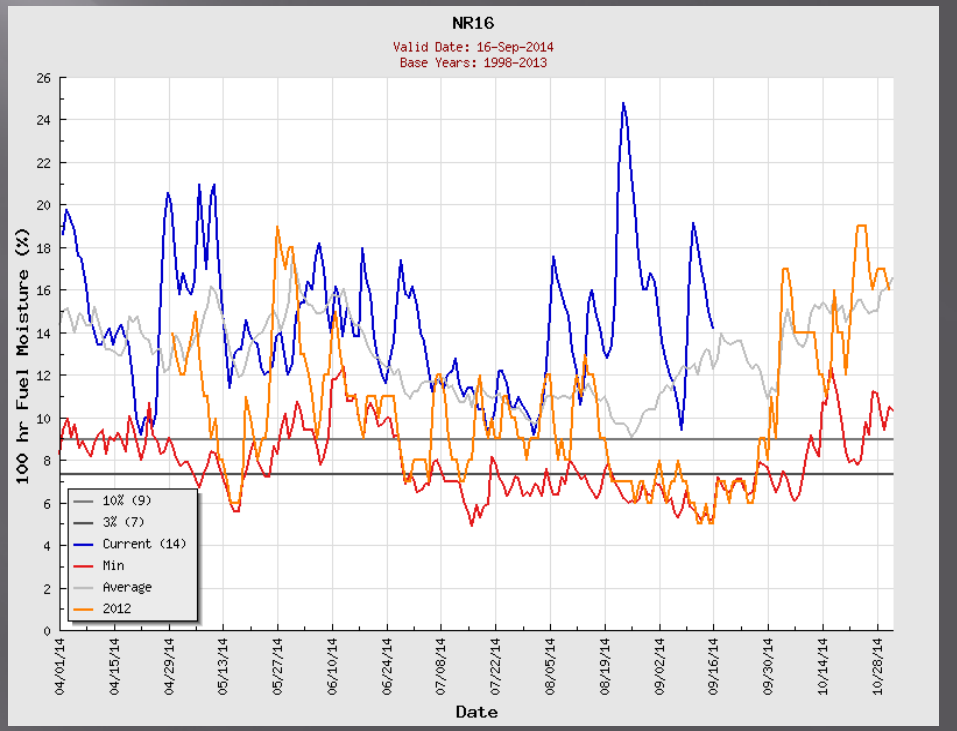


Big Sheep Mountain
Cannonball Creek

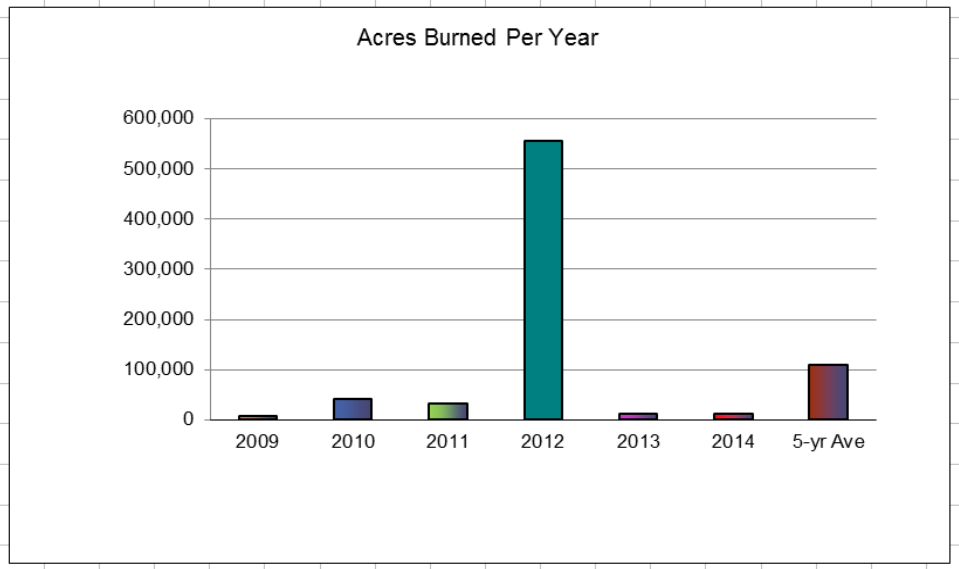
Knowlton
Sand Creek







Fire Burned Summary - 2014



2014
2013
2012
2011
2010
2009
2003
5-yr Avg

2014 - 262 Fires = 13,507 Acres
2013 - 306 Fires = 12,439 Acres
2012 - 410 Fires = 556,247 Acres
2011 - 259 Fires = 31,064 Acres
2010 - 260 Fires = 40,115 Acres
2009 - 359 Fires = 6,929 Acres
2003 - 567 Fires = 8,115 Acres
==========
5-yr Avg - 325 Fires = 154,645 Acres

2014 NORTHERN ROCKIES GEOGRAPHIC AREA LARGE WILDFIRES

The map below displays all large wildfires >100 acres reported via the National ICS-209 Program.

(currently active wildfires map)

(return to YTD & Historical page)

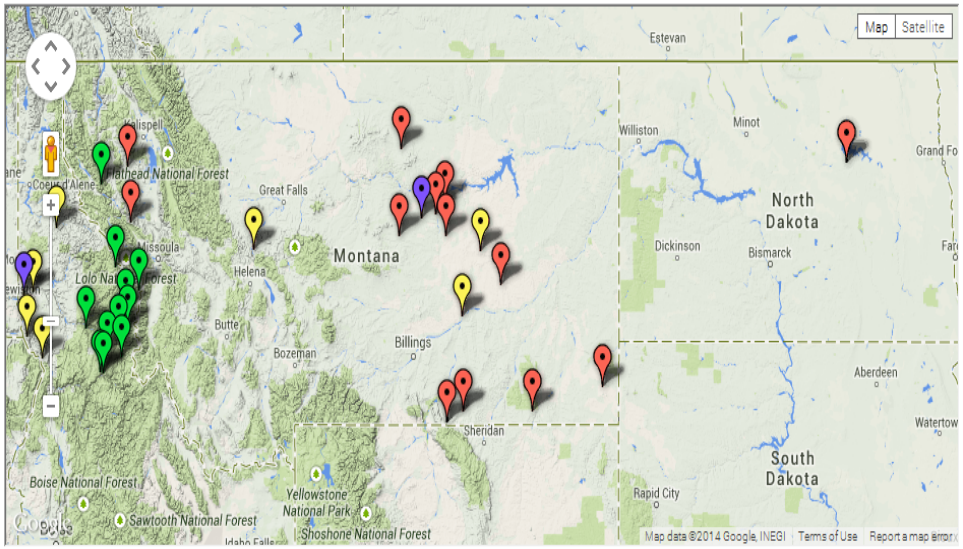
LEGEND

Department of the Interior
- Bureau of Indian Affairs
- Bureau of Land Mgmt
- U.S. Fish & Wildlife
- National Park Service

Department of Agriculture
- U.S. Forest Service

State Agencies
- Idaho Dept. of Lands
- Montana Dept. of Natural Resources & Conservation
- North Dakota Forest Service

Other Agencies
- Dept. of Defense
- Tribes



Northern Rockies Coordination Center
5765 West Broadway, Missoula, Montana 59808-9361

NORTHERN ROCKIES COORDINATION CENTER

10-year (2004-2013) Fires and Acres By State & Agency

(Fires & Acres reported via National Interagency Situation Reporting Program)

Updated: 12/31/13

		WILDLAND FIRE 10-YEAR TOTALS		WILDLAND FIRE 10-YEAR AVERAGE	
		FIRES	ACRES	FIRES	ACRES
IDAHO					
Bureau of Land Management	BLM	12	24,651	1	2,465
Department of Defense	DOD	4	0	0	0
National Park Service	NPS	1	223	0	22
Other	TRIBE	197	10,033	20	1,003
Private Land	PRI	628	43,957	63	4,396
Idaho Department of Lands	IDS	1,540	45,254	154	4,525
USDA Forest Service	USFS	3,043	623,903	304	62,390
		5,425	748,021	543	74,802
MONTANA					
Bureau of Indian Affairs	BIA	4,940	615,683	494	61,568
Bureau of Land Management	BLM	959	536,123	96	53,612
MT Counties	CNTY	408	5,280	41	528
Fish & Wildlife Service	FWS	127	121,308	13	12,131
National Park Service	NPS	79	17,401	8	1,740
Private Land	PRI	1,741	727,312	174	72,731
Dept of Natural Resources & Conservation	MTS	2,578	448,576	258	44,858
USDA Forest Service	USFS	5,773	1,363,810	577	136,381
		16,605	3,835,493	1,661	383,549
NORTH DAKOTA					
Bureau of Indian Affairs	BIA	4,006	48,551	401	4,855
Bureau of Land Management	BLM	11	341	1	34
Fish & Wildlife Service	FWS	152	12,325	15	1,233
National Park Service	NPS	6	627	1	63
Private Land	PRI	1,417	108,449	142	10,845
North Dakota Forest Service	NDS	223	12,043	22	1,204
USDA Forest Service	USFS	149	28,714	15	2,871
		5,964	211,050	596	21,105
SOUTH DAKOTA					
Bureau of Land Management	BLM	14	2,798	1	280
Harding County	CNTY	1	4	0	0
Private Land	PRI	4	3,254	0	325
SD Wildland Fire Suppression	SDS	0	0	0	0
		19	6,056	2	606
WYOMING					
National Park Service	NPS	170	69,392	17	6,939
		170	69,392	17	6,939
COMBINED					
Bureau of Indian Affairs	BIA	8,946	664,234	895	66,423
Bureau of Land Management	BLM	996	563,913	100	56,391
Counties	CNTY	409	5,284	41	528
Department of Defense	DOD	4	0	0	0
Fish & Wildlife Service	FWS	279	133,633	28	13,363
National Park Service	NPS	256	87,643	26	8,764
Other	TRIBE	197	10,033	20	1,003
Private Land	PRI	3,790	882,972	379	88,297

NORTHERN ROCKIES COORDINATION CENTER

2014 Year-to-Date Fires and Acres By State & Agency

(Fires & Acres reported by land protection via National Interagency Situation Reporting Program)

Updated: 09/17/14

		Human Caused Fires	Human Caused Acres	Lightning Caused Fires	Lightning Caused Acres	WILDFIRE TOTALS FIRES	WILDFIRE TOTALS ACRES
IDAHO							
Bureau of Indian Affairs	BIA	16	1,670	2	2	18	1,672
Bureau of Land Management	BLM	0	0	0	0	0	0
Department of Defense	DOD	0	0	0	0	0	0
U.S. Forest Service	FS	30	36	228	18,487	255	18,523
National Park Service	NPS	0	0	0	0	0	0
Private Land	PRI	0	0	0	0	0	0
Idaho Department of Lands	IDS	84	1,293	168	70,382	230	71,675
		130	2,999	398	88,871	503	91,870
MONTANA							
Bureau of Indian Affairs	BIA	263	4,382	38	1,888	301	6,270
Bureau of Land Management	BLM	25	356	51	2,510	76	2,866
MT Counties	C&L	315	5,128	75	4,760	390	9,888
U.S. Forest Service	FS	160	182	247	2,146	407	2,328
U.S. Fish & Wildlife Service	FWS	3	187	2	976	5	1,163
National Park Service	NPS	0	0	6	2	6	2
Private Land	PRI	0	0	1	55	1	55
Dept of Natural Resources & Conservation	MTS	136	356	114	221	250	577
		902	10,591	534	12,558	1,436	23,149
NORTH DAKOTA							
Bureau of Indian Affairs	BIA	333	2,548	4	4	337	2,552
Bureau of Land Management	BLM	0	0	0	0	0	0
U.S. Forest Service	FS	6	30	2	117	8	147
U.S. Fish & Wildlife Service	FWS	1	1	1	4	2	5
National Park Service	NPS	0	0	0	0	0	0
Private Land	PRI	2	33	0	0	2	33
North Dakota Forest Service	NDS	0	0	0	0	0	0
		342	2,612	7	125	349	2,737
SOUTH DAKOTA							
Bureau of Land Management	BLM	0	0	1	1	1	1
Harding County	C&L	0	0	0	0	0	0
Private Land	PRI	0	0	0	0	0	0
SD Wildland Fire Suppression	SDS	0	0	0	0	0	0
		0	0	1	1	1	1
WYOMING							
National Park Service	NPS	2	1	3	2	5	3
		2	1	3	2	5	3
COMBINED							
Bureau of Indian Affairs	BIA	612	8,600	44	1,894	656	10,494
Bureau of Land Management	BLM	25	356	52	2,511	77	2,867
Counties	C&L	315	5,128	75	4,760	390	9,888
Department of Defense	DOD	0	0	0	0	0	0
U.S. Forest Service	FS	196	248	477	20,750	670	20,998
U.S. Fish & Wildlife Service	FWS	4	188	3	980	7	1,168
National Park Service	NPS	2	1	9	4	11	5
Private Land	PRI	2	33	1	55	3	88
State Agencies	ST	220	1,649	282	70,603	480	72,252
TOTAL - ALL NRGA AGENCIES FOR 2014		1,376	16,203	943	101,557	2,294	117,760

NORTHERN ROCKIES COORDINATION CENTER

2014 NRGA Year-to-Date Large Wildland Fires > 100 acres By State

(As reported via the National ICS-209 Program)

Updated: 09/17/14

IDAHO

	Wildland Fire	Kind*	Disp	Agency	Unit	Start Date	End** Date	Latitude	Longitude	Cause***	Acres	Estimated Costs	Structures Destroyed	Incident Commander(s)
1	South Storm	MON	GVC	USFS	NCF	07/23/14		46 31 10N	114 24 03W	L	350	$5,800	0	Young
2	Dolph	MON	GVC	FS	NCF	07/24/14		46 17 00N	114 41 50W	L	240	$23,000	0	Young
3	Central Grade	FSPC	GVC	BIA	NPT	07/26/14	07/28/14	46 27 41N	116 54 13W	H	1,628	$200,000	0	Rogers
4	Bruin	MON	GVC	USFS	NCF	08/01/14		46 45 51N	114 54 26W	L	240	$23,000	0	Lubke
5	Big Cougar	FSPC	GVC	IDS	CMS	08/02/14	08/14/14	45 59 33N	116 49 51W	L	65,227	$4,500,000	9	Pearson(T2)
6	Upper Mica Complex	FSPC	CDC	IDS	SJS	08/03/14	08/13/14	47 12 32N	116 11 45W	L	265	$3,100,000	0	Benes(T2)
7	High Range	FSPC	GVC	IDS	CMS	08/03/14	08/12/14	45 45 08N	116 29 46W	L	4,748	$2,958,808	3	Fry(T2)
8	Rain	MON/PZP	GVC	USFS	NCF	08/03/14		45 35 00N	115 10 26W	L	4,059	$463,000	0	Lundgren
9	Johnson Bar	FSPC	GVC	USFS	NCF	08/03/14		46 05 12N	115 33 41W	L	8,867	$10,300,000	0	Young
10	Clifford	FSPC	GVC	IDS	CMS	08/06/14	08/08/14	46 29 29N	116 51 30W	H	630	$15,000	0	Handel
11	Myers	MON	GVC	USFS	NCF	08/08/14		45 36 00N	115 15 00W	L	2,001	$25,000	0	Lundgren
12	Eagle Rock	MON	GVC	USFS	NCF	08/09/14		46 00 14N	114 50 43W	L	390	$8,000	0	District
13	Prong	MON	GVC	USFS	NCF	08/09/14	09/04/14	45 49 05N	115 05 55W	L	144	$5,000	0	McLeod
14	Elevator Mountain (part of Selway Complex on	MON	GVC	USFS	NCF	08/09/14		45 58 18N	114 49 05W	L	0	$0	0	Demoss
15	Elk Ridge	MON	GVC	USFS	NCF	08/12/14		46 06 09N	114 39 03W	L	150	$1,500	0	District
									NR IDAHO WILDLAND FIRES >100 ACRES		88,939	$21,625,908	12	

MONTANA

	Wildland Fire	Kind*	Disp	Agency	Unit	Start Date	End** Date	Latitude	Longitude	Cause***	Acres	Estimated Costs	Structures Destroyed	Incident Commander(s)
1	Spearsiding	MON	BDC	BIA	CRA	04/22/14	04/25/14	45 08 40N	107 23 32W	U	111	$15,000	0	Herrera
2	PK	FSPC	LEC	CNTY	LG55	05/28/14	05/31/14	47 18 37N	108 18 43W	L	814	$45,380	0	Snellman, Snyder
3	Olin	FSPC	LED	BLM	LED	06/20/14	06/23/14	47 21 17N	107 59 32W	U	1,204	$94,000	0	Snellman
4	Rag Horn	FSPC	MCD	FWS	CMR	07/07/14	07/09/14	47 28 04N	107 47 49W	L	189	$110,000	0	Bloxham, Forsythe
5	SeePay	CON	MDC	BIA	FHA	07/17/14		47 16 18N	114 35 48W	L	1,156	$2,500,000	0	McCrea
6	Lodge Grass Basin	MON	BDC	BIA	CRA	07/22/14		45 01 18N	107 44 38W	U	167	$200,000	0	Herrera
7	Montgomery	FSPC	MCC	BLM	MCD	07/24/14	07/28/14	46 34 20N	106 35 27W	U	8,500	$90,470	0	Harding, Dresbach
8	Calf	FSPC	MCC	BLM	MCD	07/24/14	07/28/14	47 06 45N	107 47 08W	L	1,360	$184,330	0	Brooks, Blankenship
9	Ridgeway	FSPC	MCC	BLM	MCD	07/24/14	07/28/14	45 25 18N	104 23 43W	L	548	$30,000	0	Erickson
10	45	FSPC	BDC	MTS	SOS	07/26/14	07/28/14	46 13 51N	107 24 59W	U	780	$100,000	0	Johnson
11	Lozeau	FSPC	MDC	BIA	FHA	08/01/14	8/6/2014	47 52 08N	114 39 21W	L	257	$140,000	0	Morigeau
12	Thompson River	FSPC/CON	MDC	USFS	LNF	08/03/14		41 41 36N	115 13 00W	L	1,646	$8,230,272	0	Kusiko(T2)
13	Flood	FSPC	MCC	BLM	MCD	08/07/14	8/9/2014	45 08 54N	105 54 18W	L	103	$100,000	0	McKinney
14	Rubaboo	FSPC	GDC	BIA	FBA	08/11/14	8/12/2014	48 04 03N	108 44 21W	H	435	$35,000	0	Morin
15	Blazier	FSPC	GDC	PRI	PRI	08/12/14	8/13/2014	46 57 03N	107 01 59W	H	614	$55,000	0	Hageman/Bloxham
16	Blakslee	FSPC	LEC	BLM	LED	08/19/14	8/21/2014	47 06 38N	108 46 39W	U	1,033	$86,440	0	Wald
17	Log Gulch	FSPC	HDC	MTS	CES	08/20/14	8/22/2014	46 57 58N	111 56 12W	H	215	$265,000	0	Hamilton
18	Selway Complex	MON/PZP	BRC	USFS	BRF	08/31/14		45 45 56N	114 47 31W	L	1,659	$168,130	0	Taylor
									MONTANA WILDLAND FIRES >100 ACRES		20,791	$12,449,022	0	

NORTH DAKOTA

	Wildland Fire	Kind*	Disp	Agency	Unit	Start Date	End** Date	Latitude	Longitude	Cause***	Acres	Estimated Costs	Structures Destroyed	Incident Commander(s)
1	Oberon	FSPC	NDC	BIA	FTA	05/15/14	05/16/14	47 54 48N	99 07 37W	H	640		0	Snow
									NORTH DAKOTA WILDLAND FIRES >100 ACRES		640	$0	0	

YELLOWSTONE NATIONAL PARK, WY

	Wildland Fire	Kind*	Disp	Agency	Unit	Start Date	End** Date	Latitude	Longitude	Cause***	Acres	Estimated Costs	Structures Destroyed	Incident Commander(s)
1														
									YELLOWSTONE NP, WY WILDLAND FIRES >100 ACRES		0	$0	0	

NORTHERN ROCKIES AREA

	Acres	Estimated Costs	Structures Destroyed
2014 NORTHERN ROCKIES AREA WILDLAND FIRES >100 ACRES	110,370	$34,074,930	12

* = Kind

FSPC = Full Suppression Strategy (Perimeter Control)

** = End Date
(i.e. Contain, Control, Out or Final ICS-209 submitted)

*** = CAUSES

Montana Department of Natural Resources & Conservation

http://www.dnrc.mt.gov/Forestry/Fire/Default.asp

Northern Rockies Coordination Center

http://gacc.nifc.gov/nrcc/index.htm

Montana Drought and Water Supply Status by County

Change from August to September 2014 – Assessed 9/11/2014

Wetter – 1 Cat

Beaverhead
Big Horn
Broadwater
Carter
Cascade
Chouteau
Custer
Deer Lodge
Fallon
Golden Valley
Granite
Jefferson
Lewis and Clark
Liberty
Madison
Meagher
Missoula
Park
Powder River
Powell
Ravalli
Rosebud
Silver Bow
Sweetgrass
Wheatland
Yellowstone

Wetter – 2/3 Cat

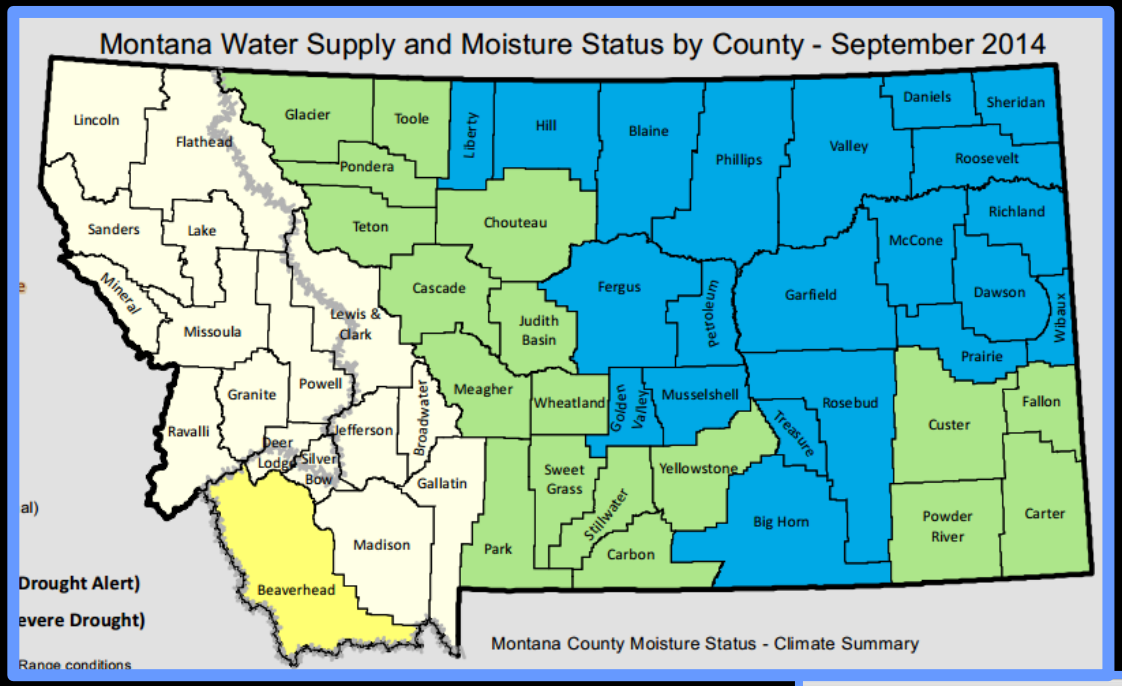
Blaine (+2)
Daniels (+2)
Dawson (+2)
Garfield (+2)
Hill (+2)
Judith Basin (+2)
McCone (+2)
Musselshell (+2)
Phillips (+2)
Prairie (+2)
Richland (+2)
Roosevelt (+2)
Sheridan (+2)
Treasure (+2)
Valley (+2)
Wibaux (+2)
Fergus (+3)
Petroleum (+3)

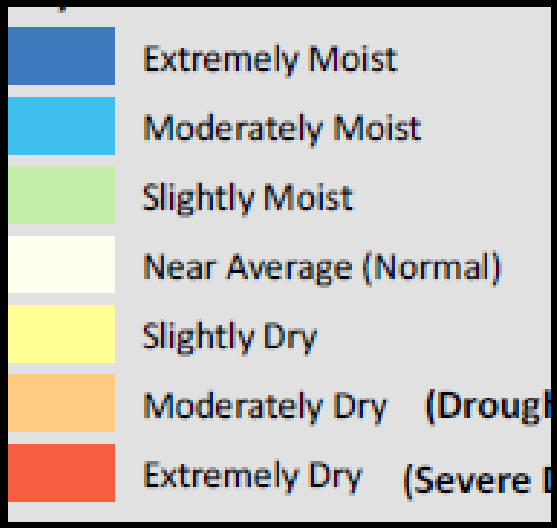
No Change

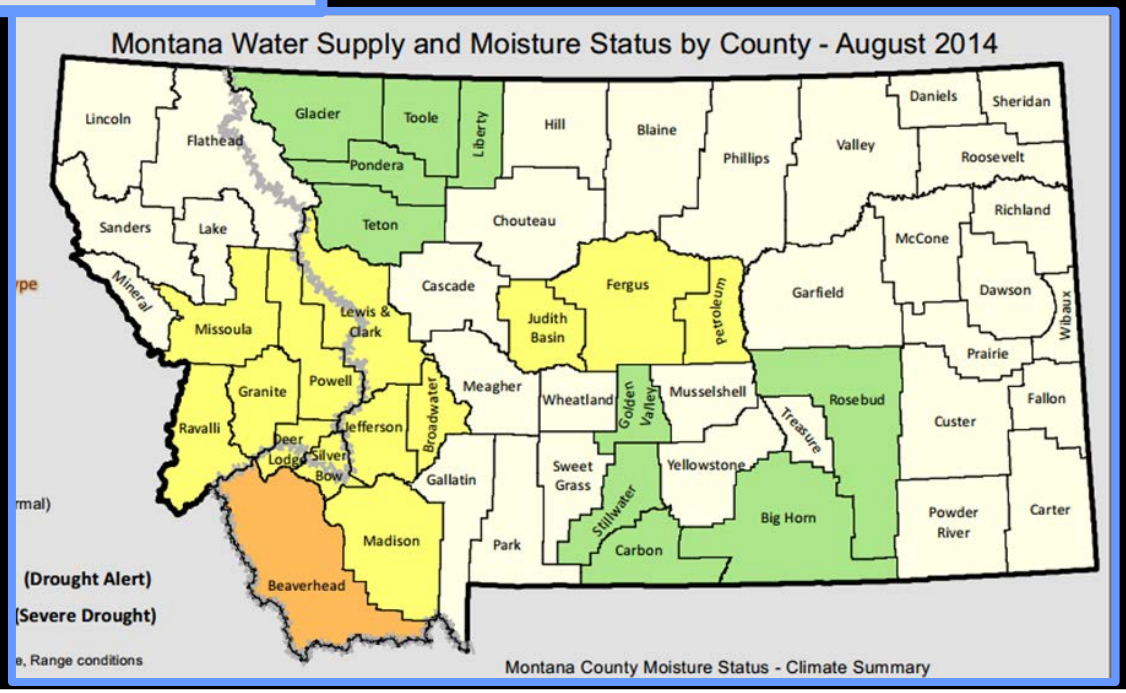
Carbon
Flathead
Gallatin
Glacier
Lake
Lincoln
Mineral
Pondera
Sanders
Stillwater
Teton
Toole

Montana Drought Status

September 2014 vs. August 2014







Montana Drought & Water Supply Advisory Committee

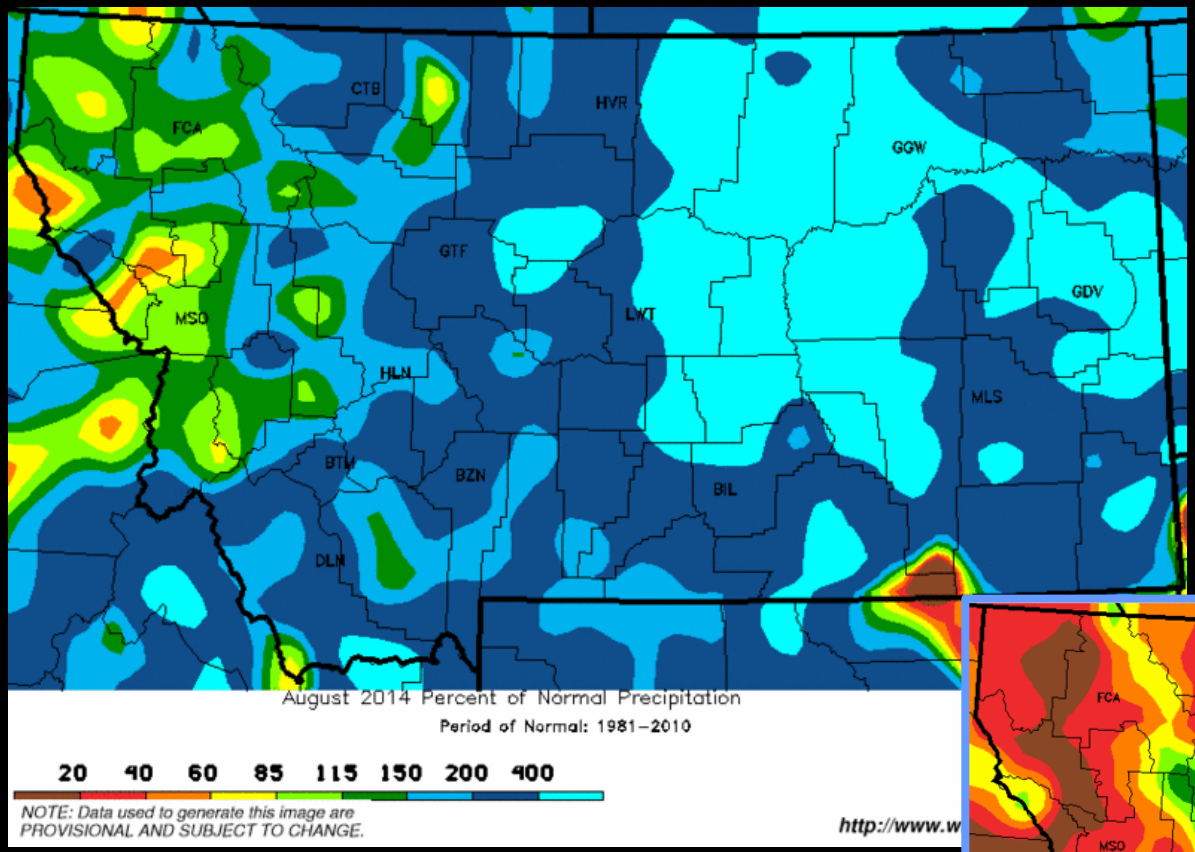
September 18, 2014

National Weather Service

Gina Loss – Service Hydrologist

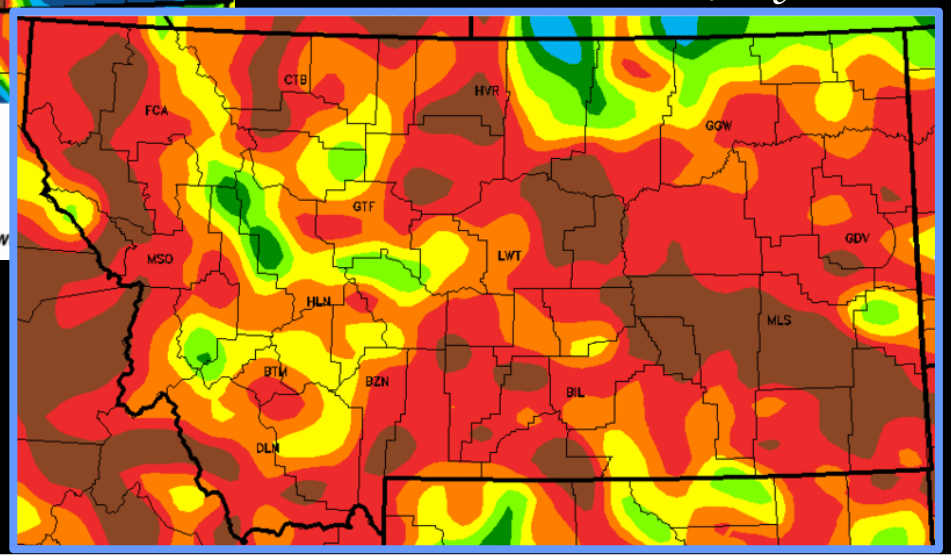
Percent of Normal Precipitation

August 2014



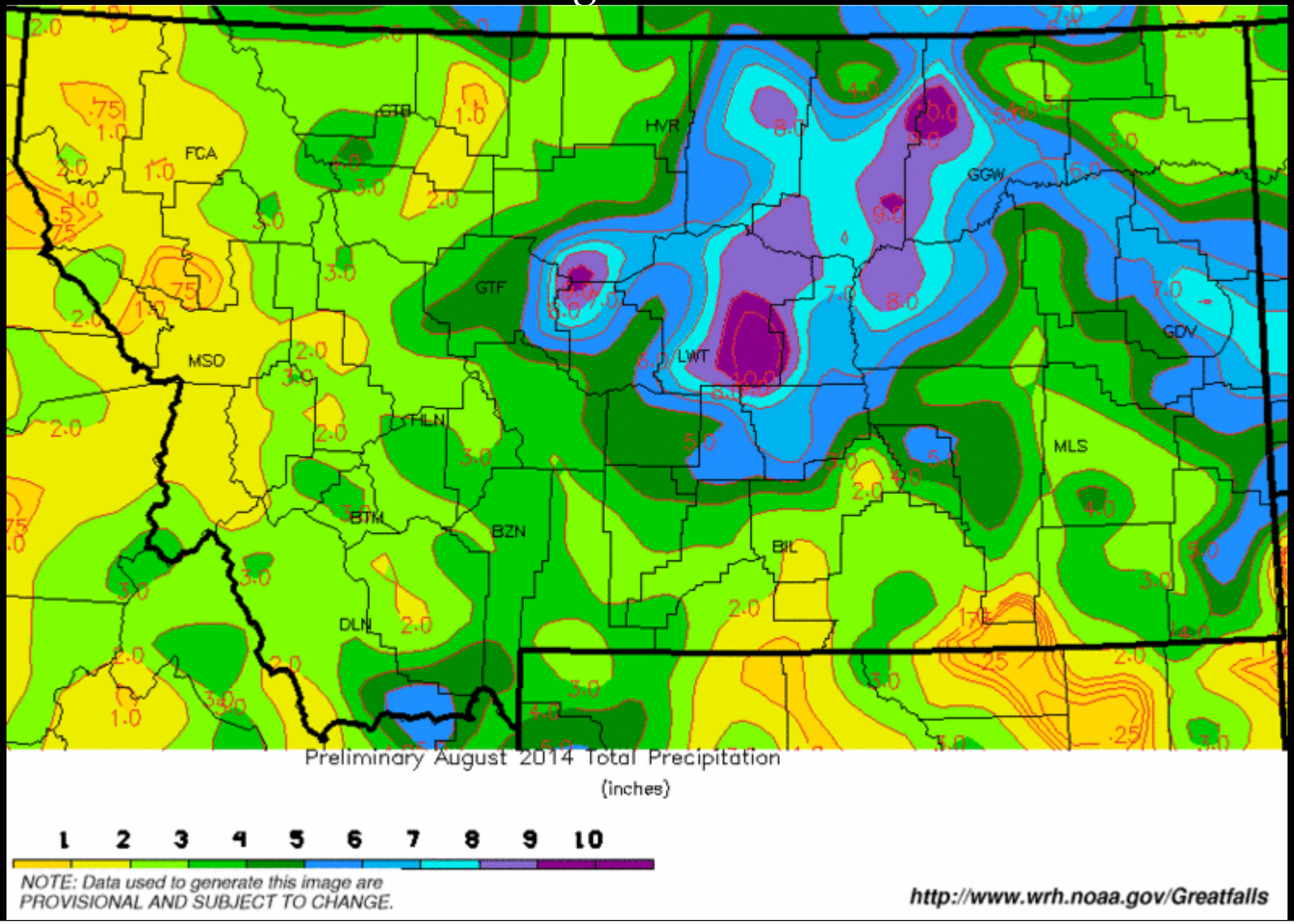
- Most of Montana well above normal
- Isolated areas near to slightly below normal

July 2014



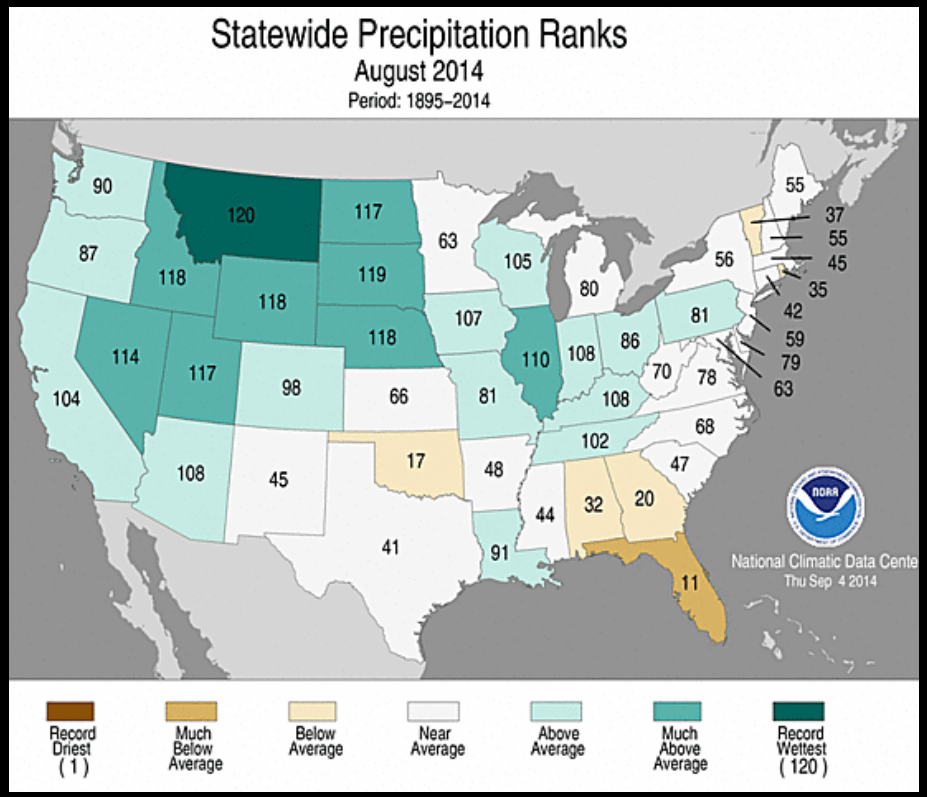
Total Precipitation

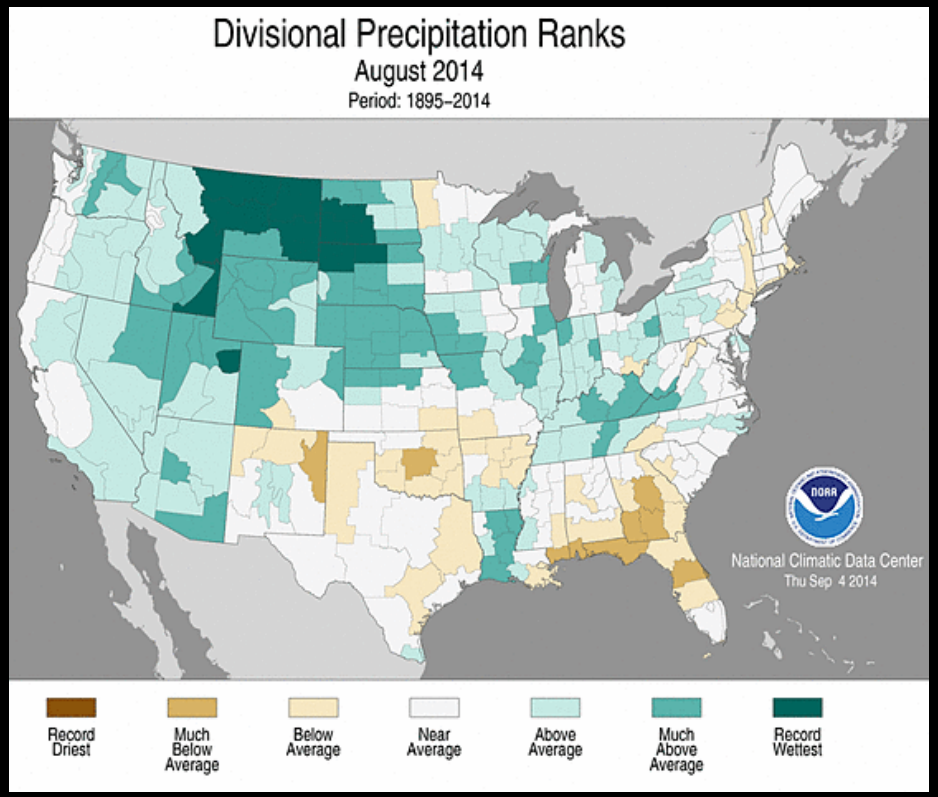
August 2014



August Precipitation Ranking

Statewide and Divisional

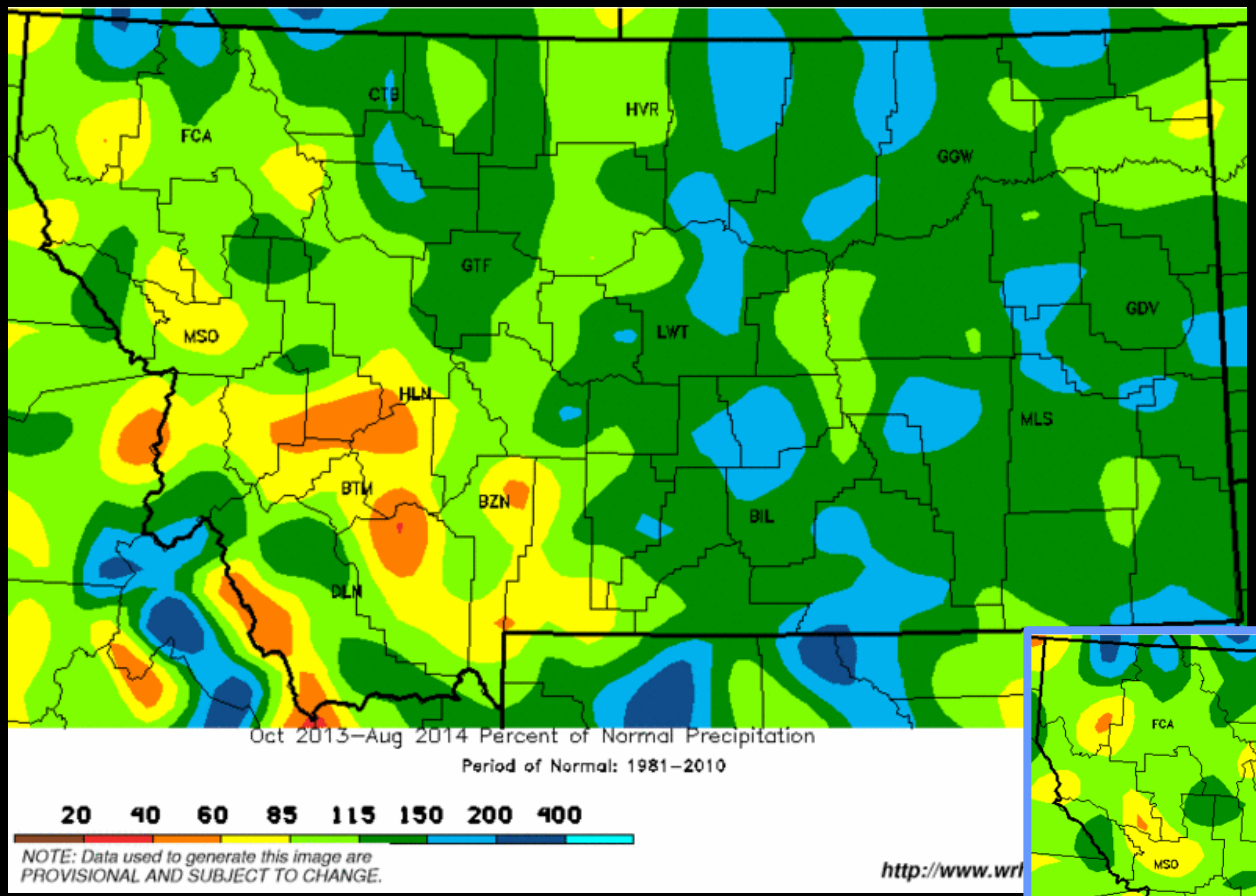




Nearly 50 locations set new August precipitation records.
Highest amount was 12.75 inches at Grass Range.
August averaged 3.72 inches - 2.42 inches above normal and highest August value of record.
The old record was 2.84 inches in 1933.
Statewide composite precipitation for the past 12 months is 3.38 inches above normal.

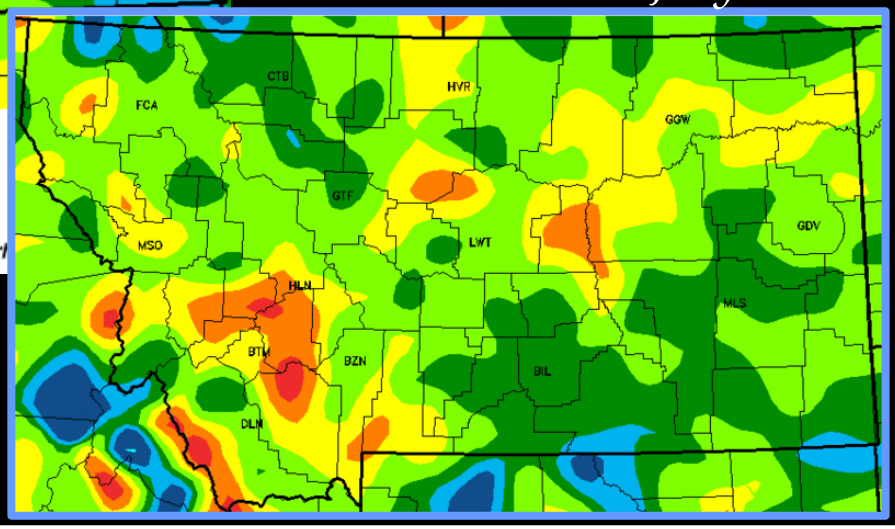
Percent of Normal Precipitation

Water Year 2014



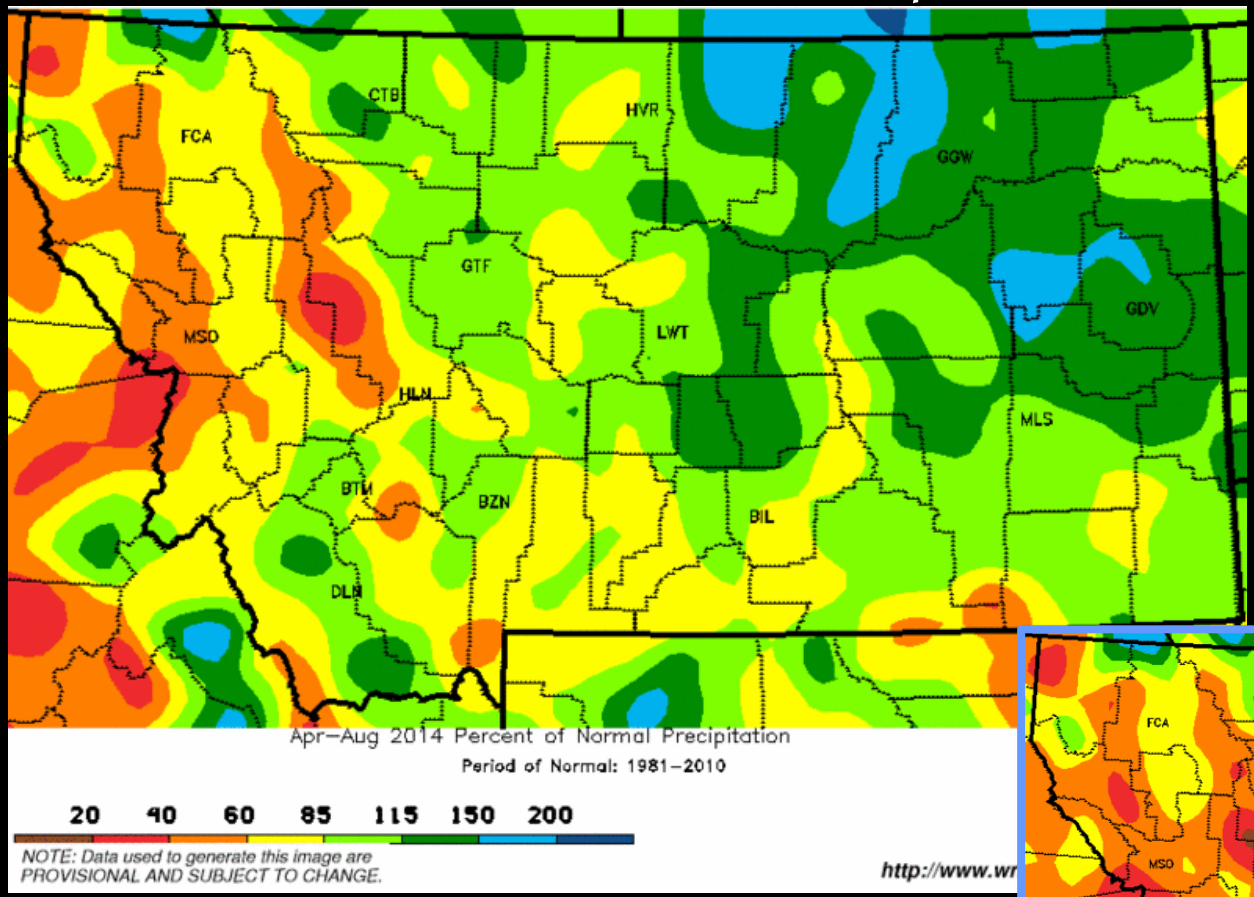
- October – August
- Below to well below normal portions of west and southwest
- Above to well above normal over the plains

October – July 2014



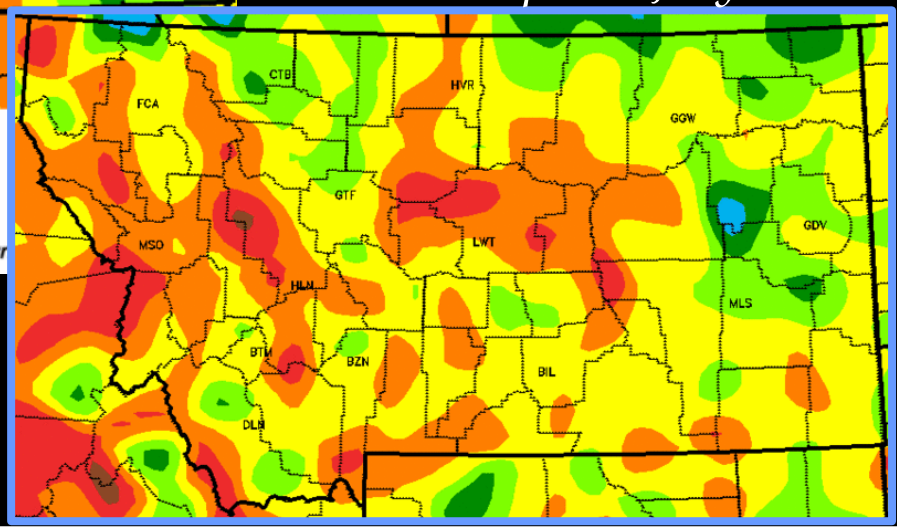
Percent of Normal Precipitation

Crop Year



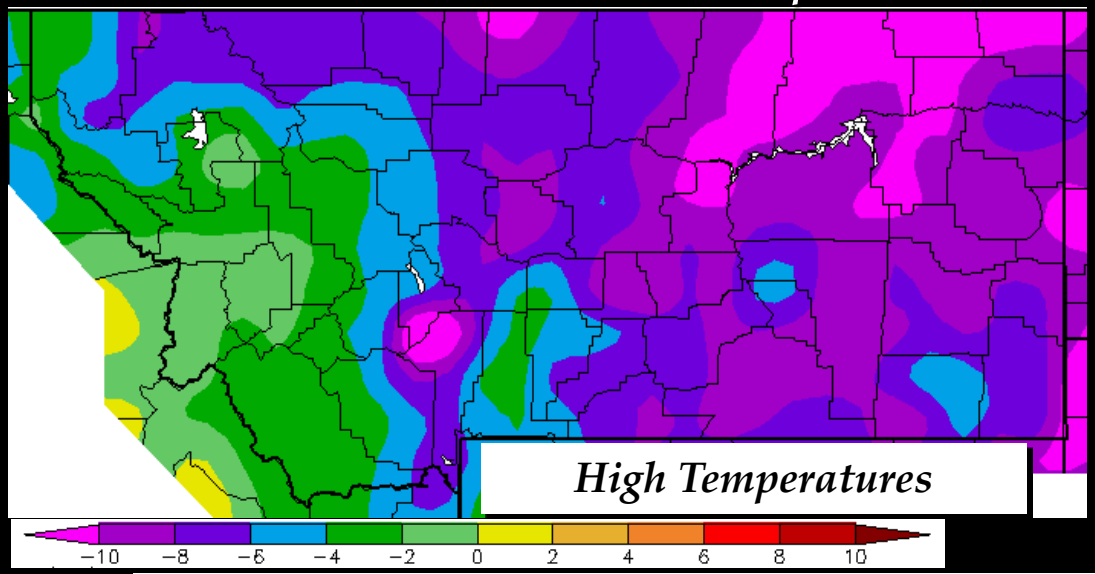
- April - August
- Below to well below normal west, southwest, south central
- Near to well above normal north, central, southeast

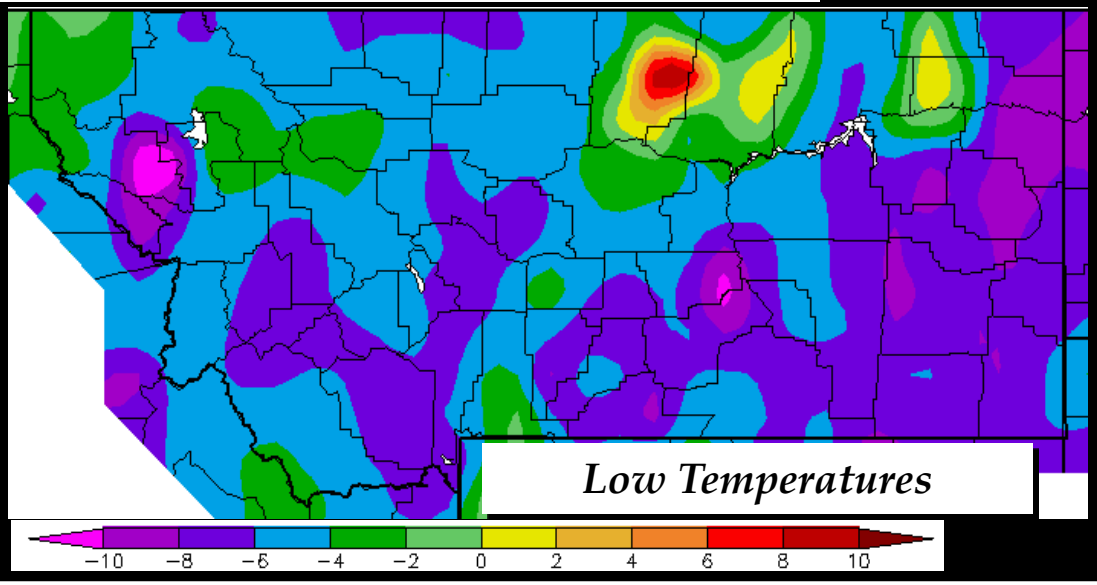
April – July 2014



Temperature Anomalies

September 1 - 16

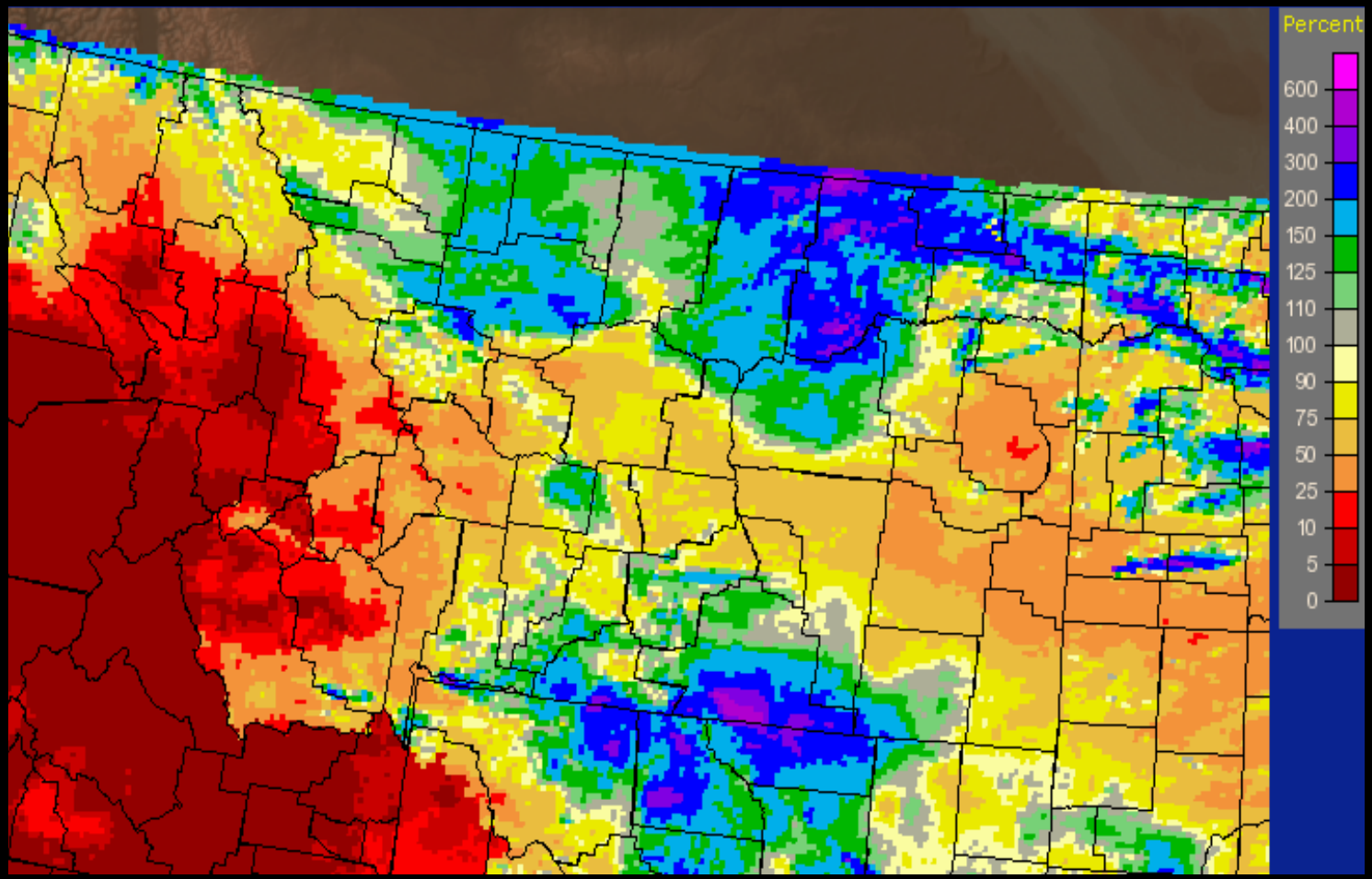




- Highs
  - Near normal to 8 degrees below normal west and southwest
  - 6 to 12 degrees below normal north, central, and east
- Lows
  - 4 to 8 degrees below normal most of the state

Percent of Average Precipitation

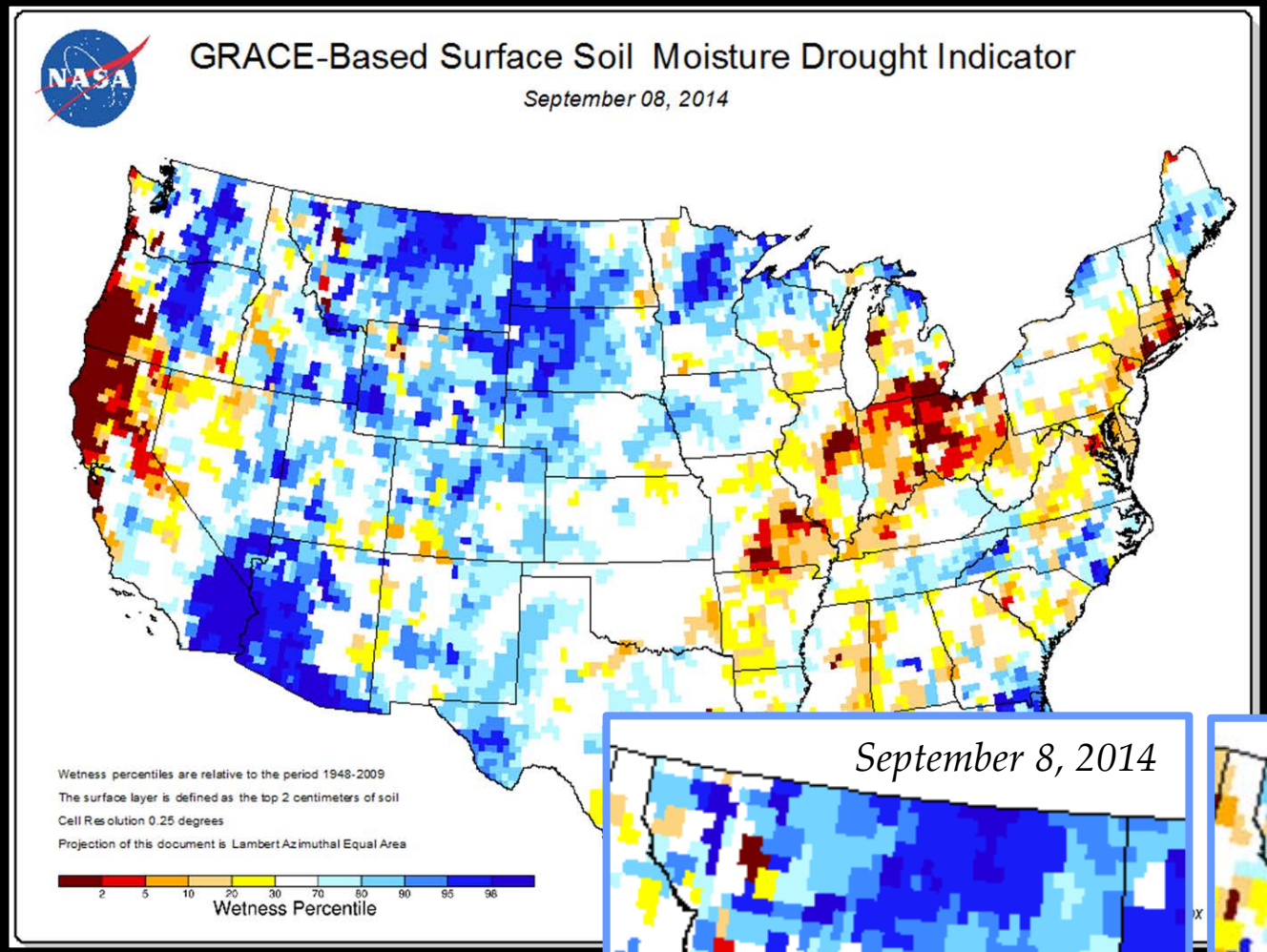
September 1 - 16

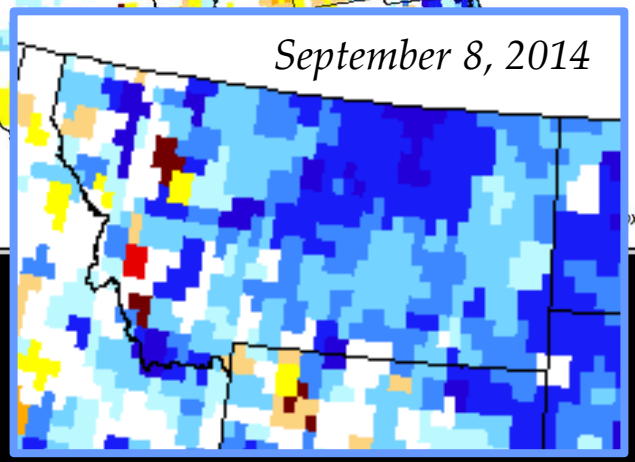


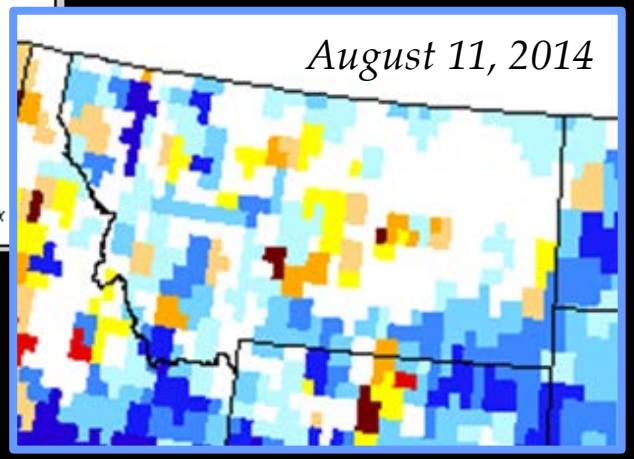
- Below to well below normal west, southwest, and east
- Above to well above normal north, northeast, and south central

Snow - September 10-11, 2014

Soil Moisture – Upper 1 Meter

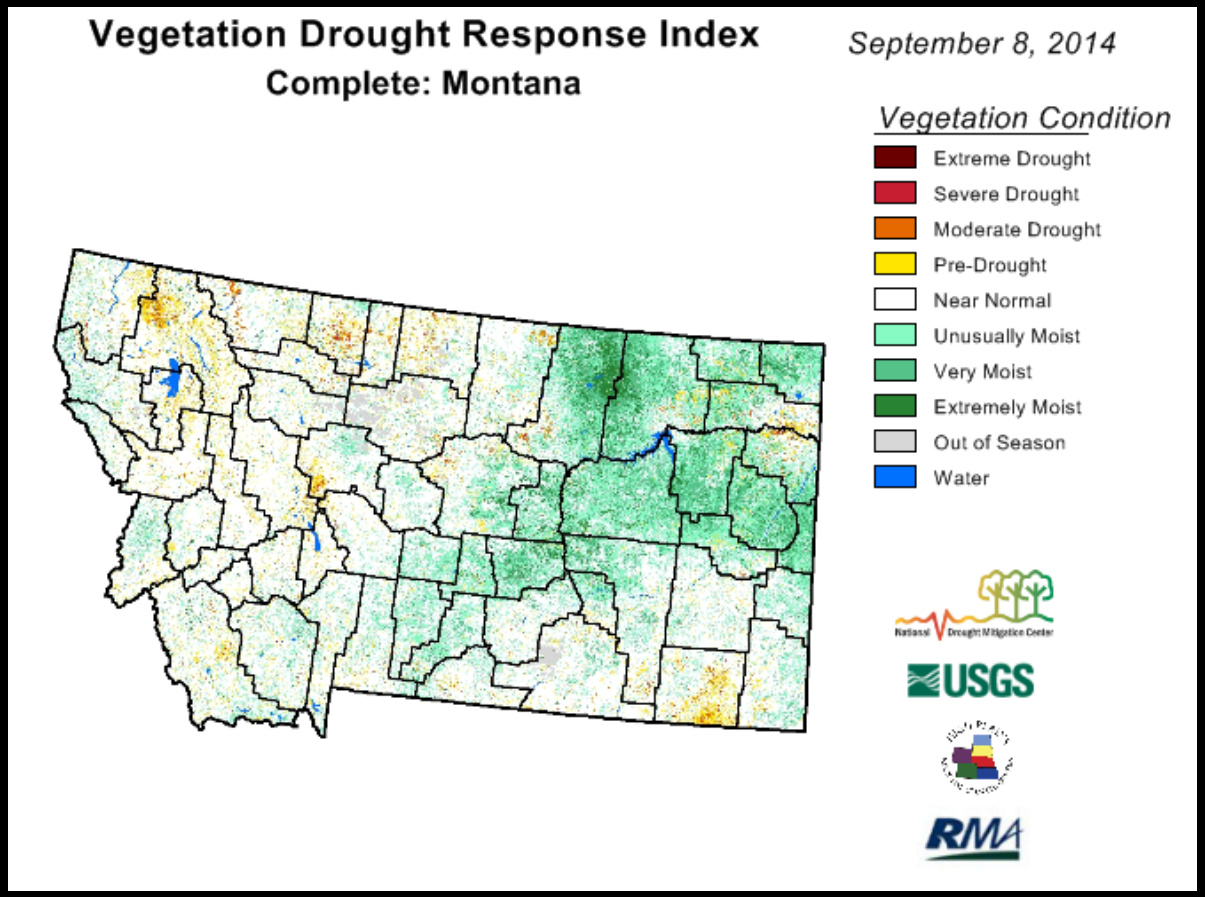


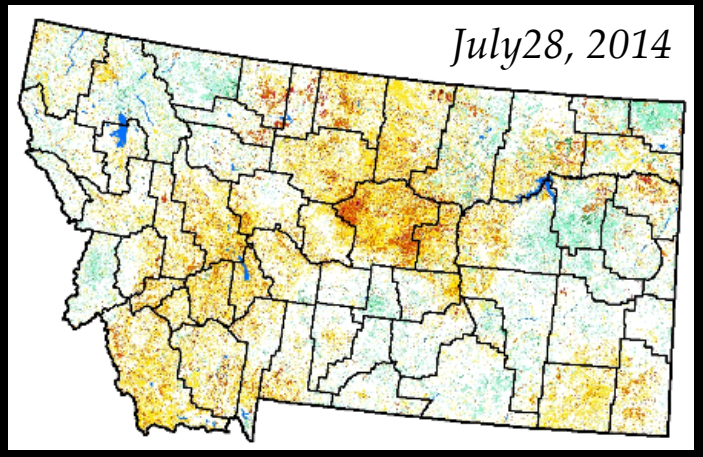


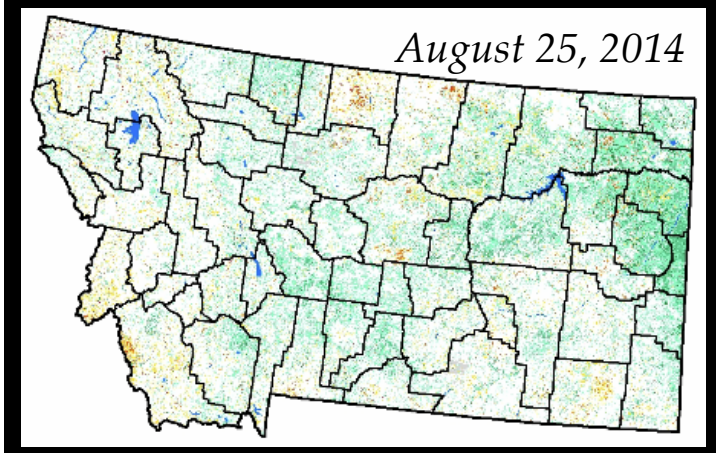


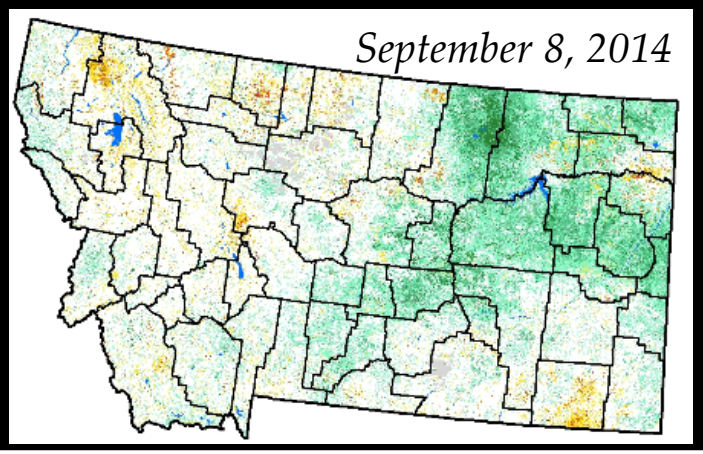
VegDRI Trends

Large areas Unusually to Very Moist

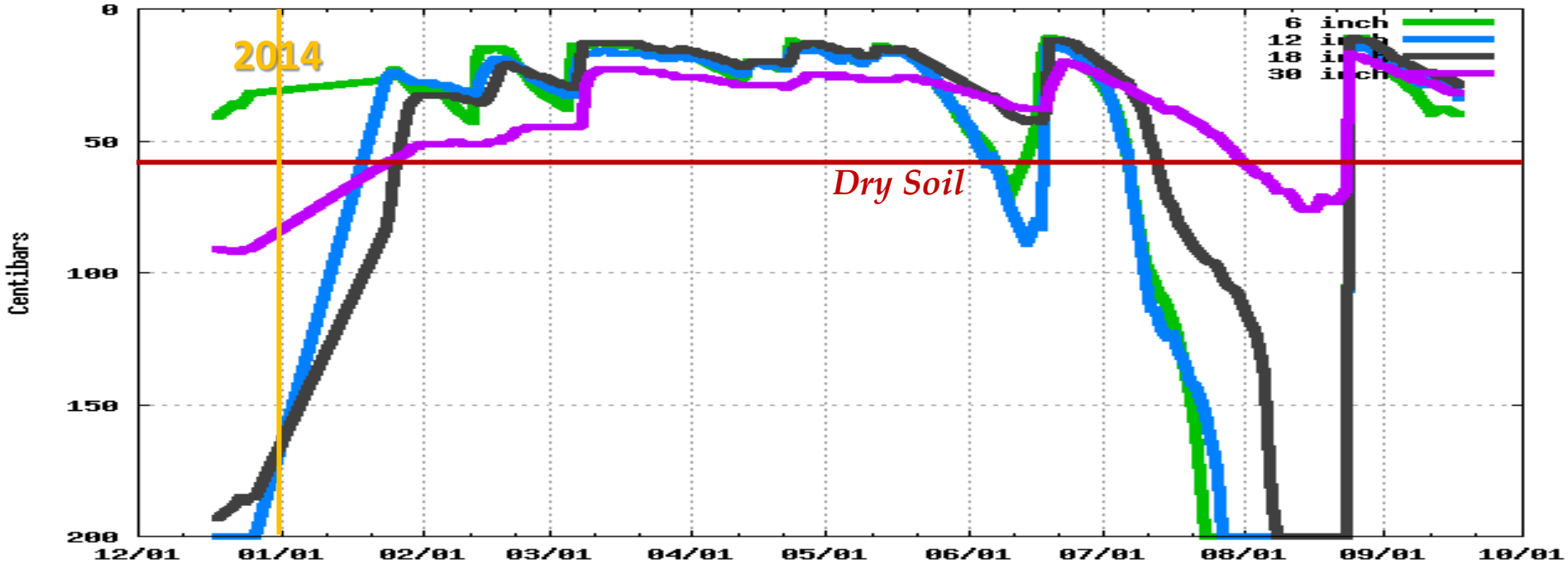


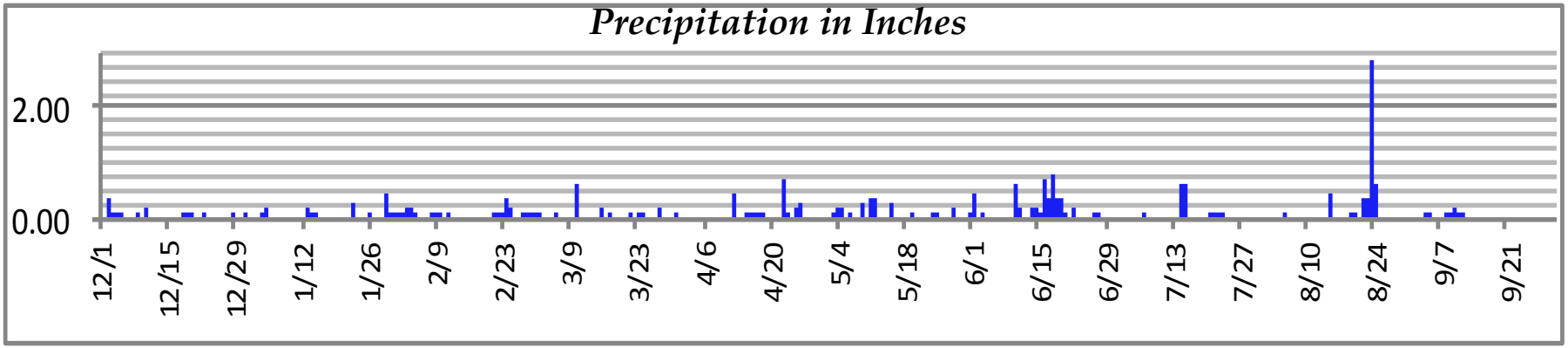






Great Falls Soil Moisture

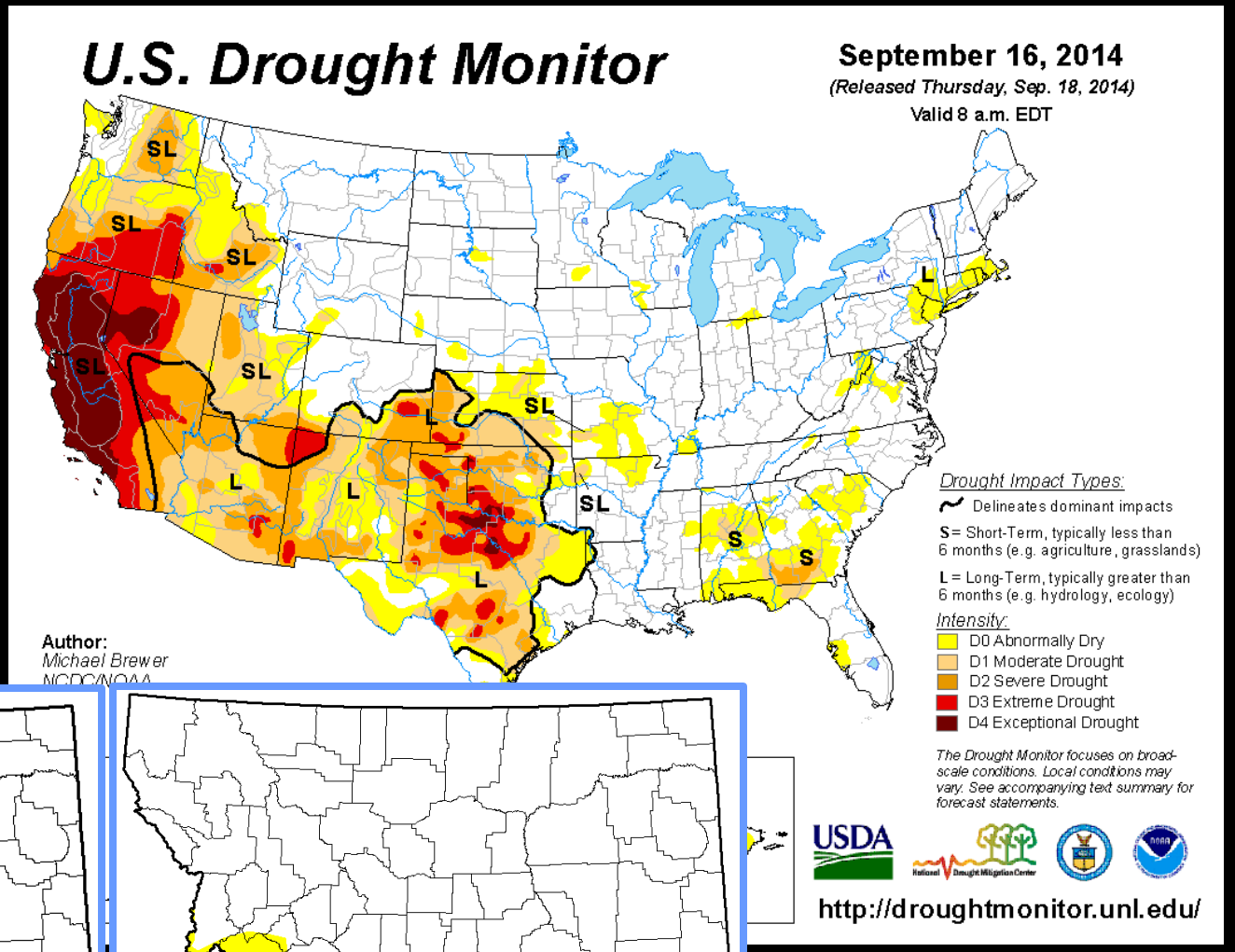


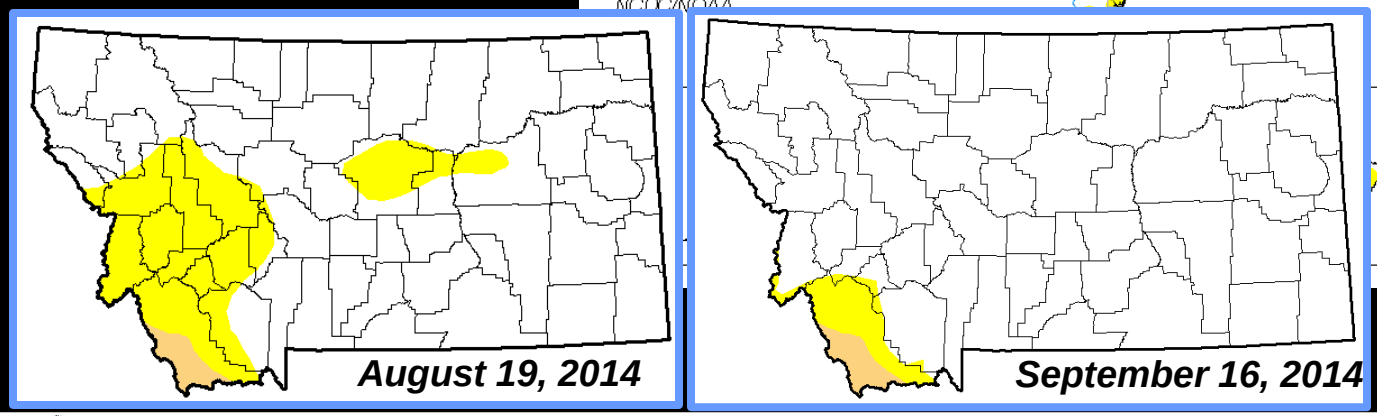


National Drought Monitor

Conditions as of September 16, 2014

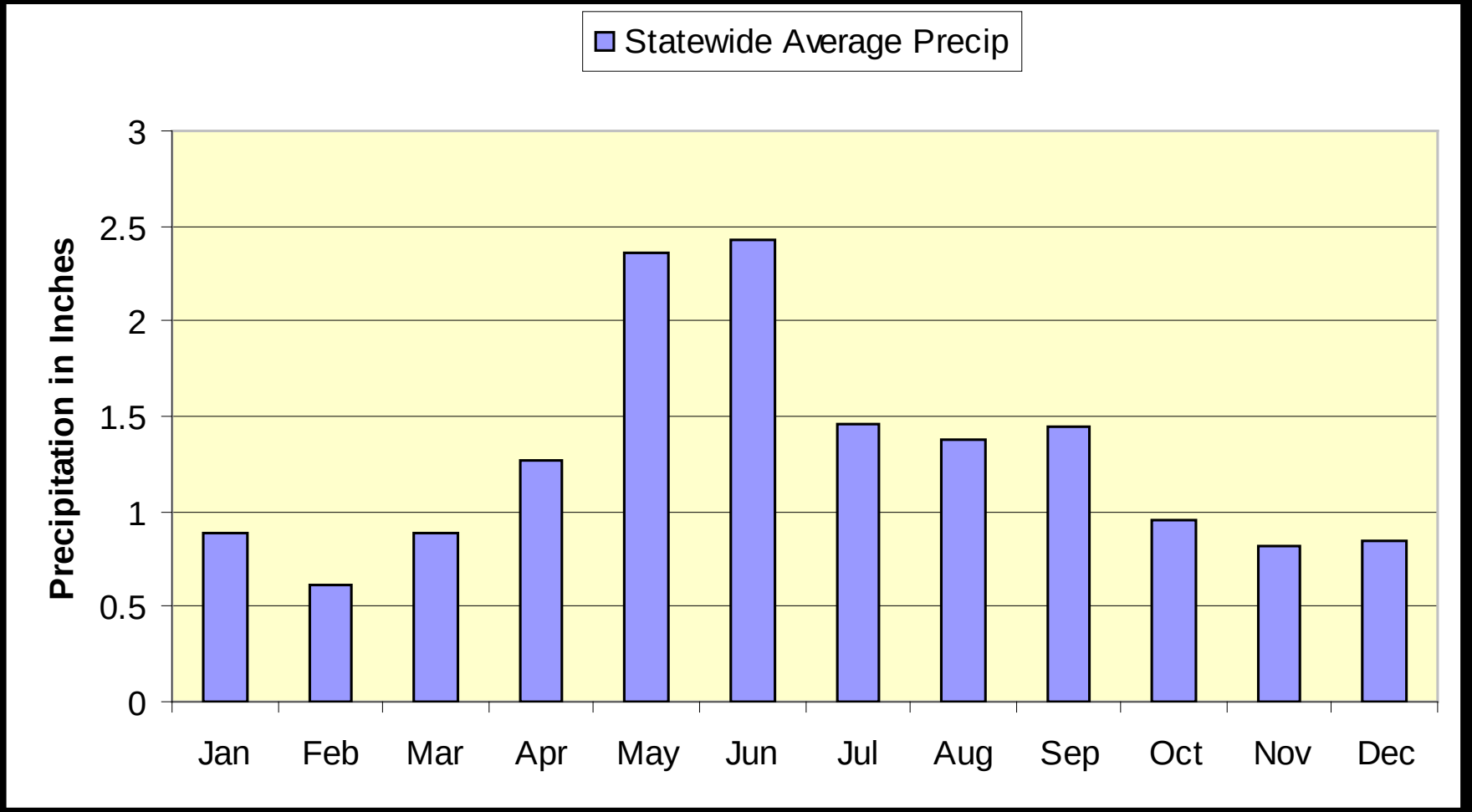
- Elimination of D0 from all but Beaverhead County
- Even with recent rain, Beaverhead County seeing D0/Abnormally Dry to D1/Moderate Drought conditions



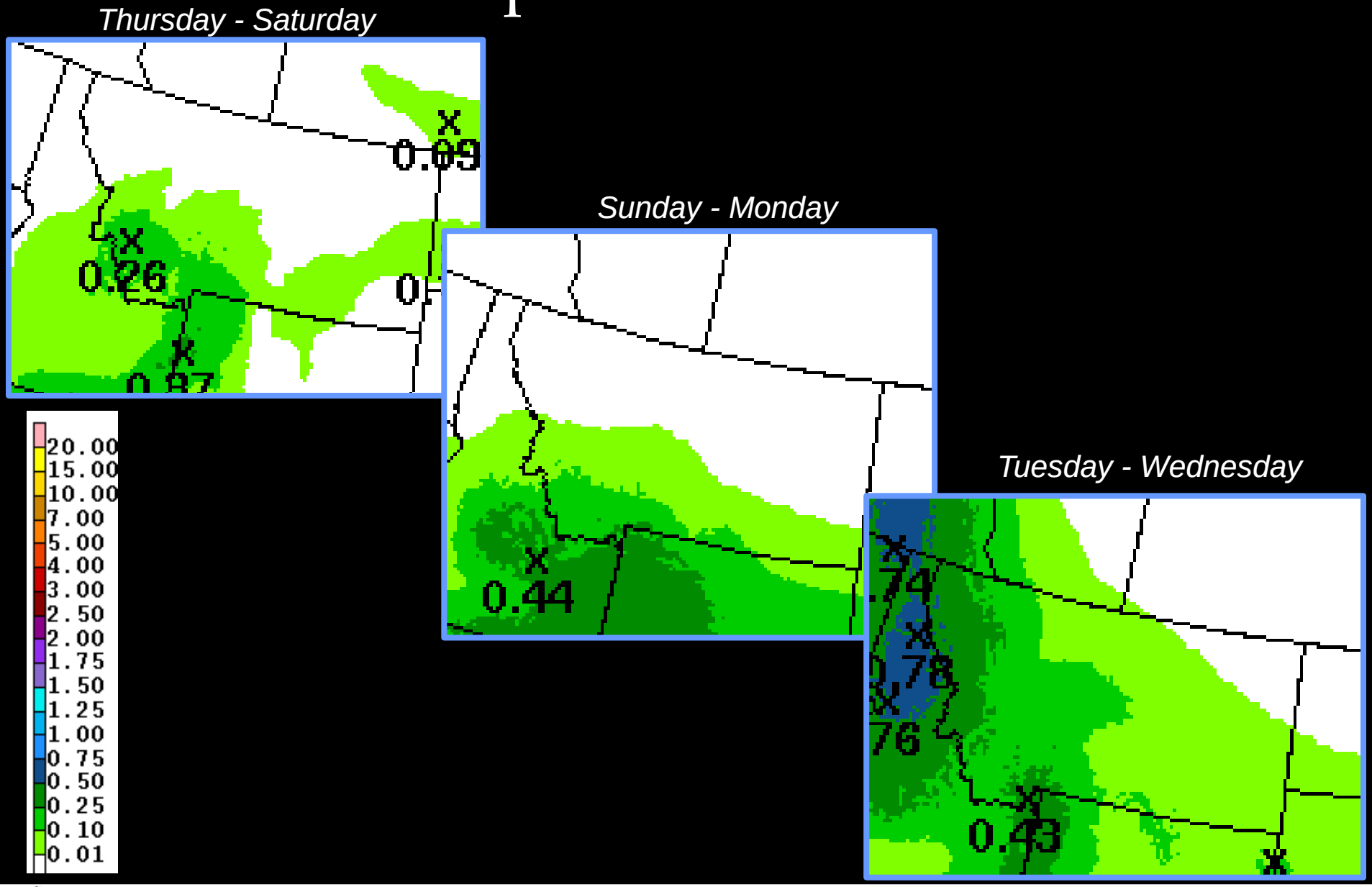


Statewide Average Precipitation

September last month of 'summer regime' before drier autumn and winter months

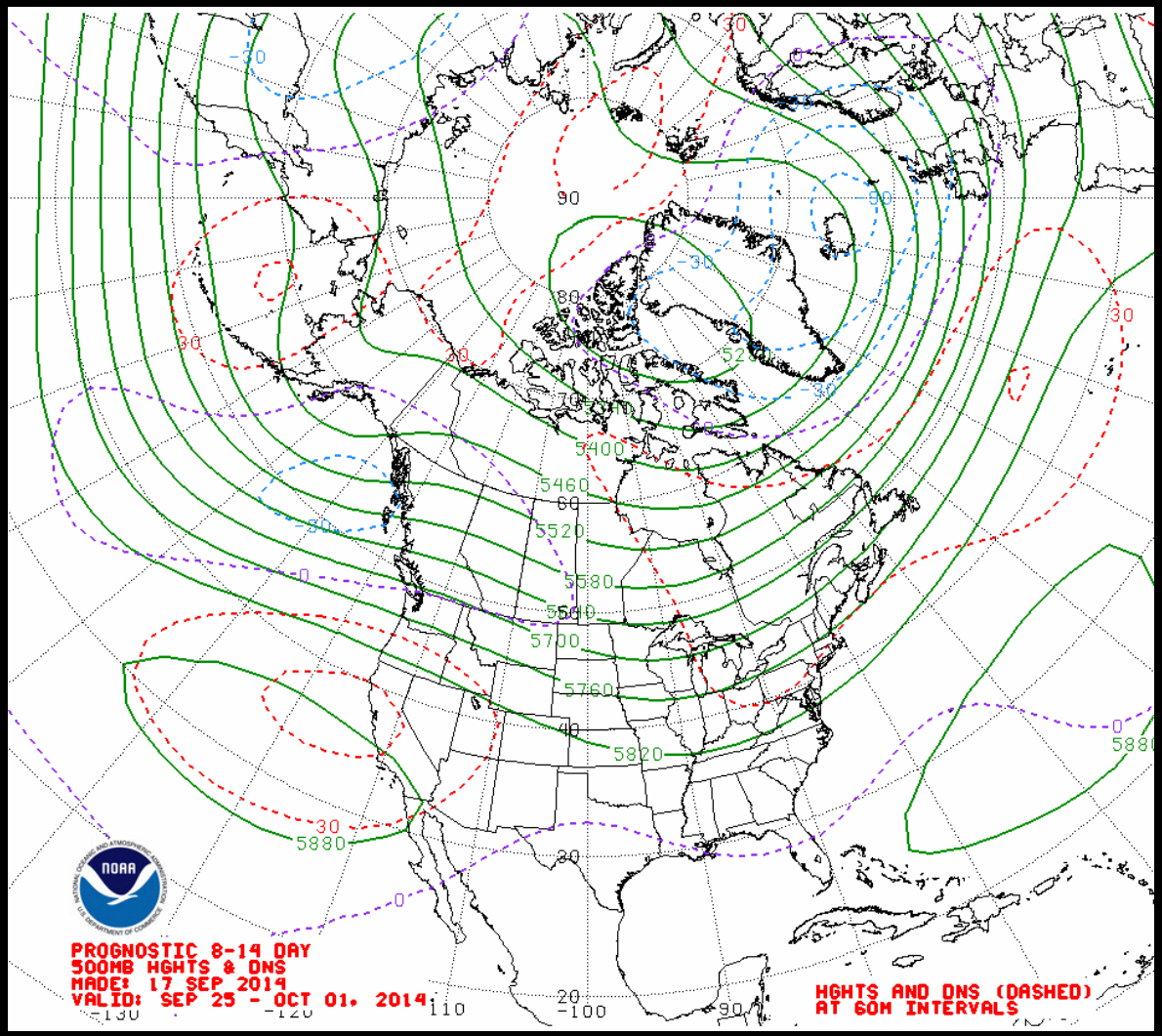


Precipitation Forecast



8 to 14 Day Outlook

500mb Heights and Anomalies

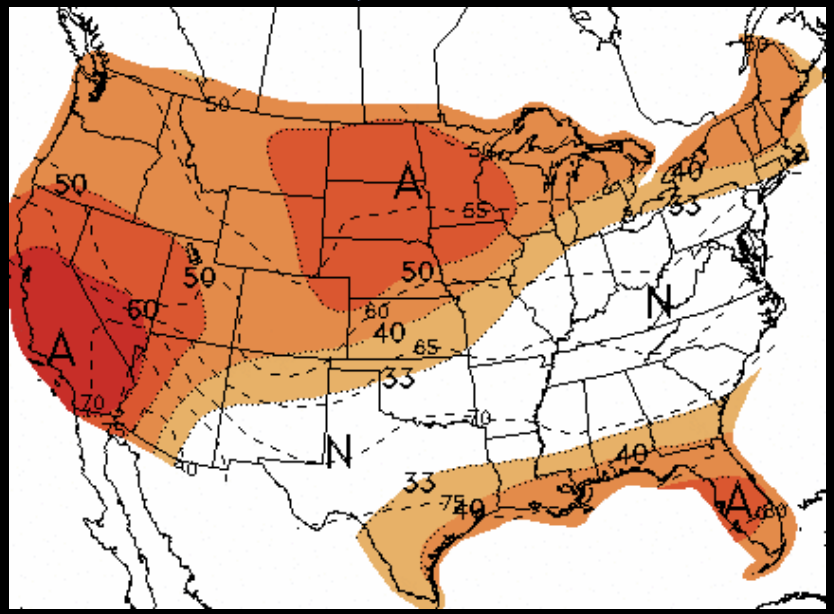


- September 25 – October 1
- Westerly flow into western U.S.

8 to 14 Day Outlook

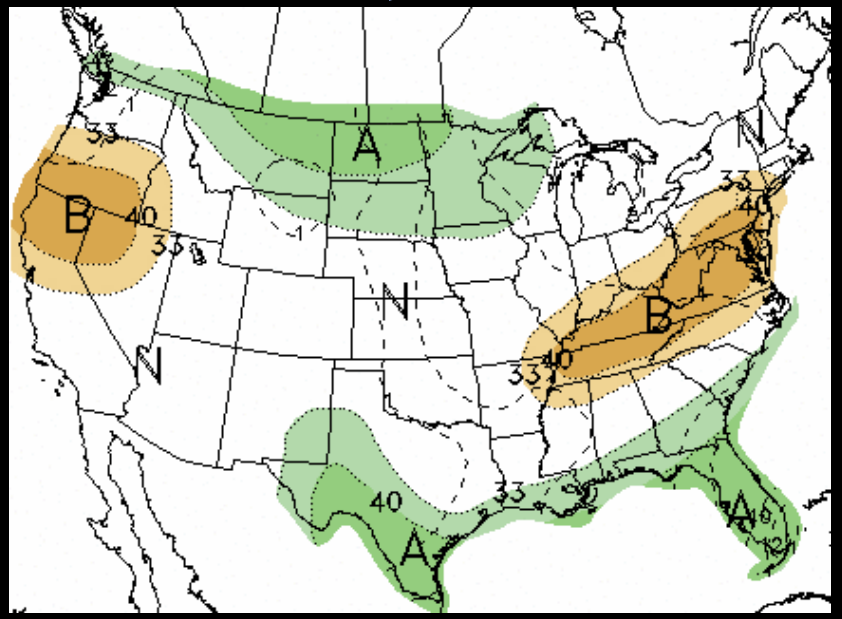
September 25 – October 1

Temperature



- 40% to 60% chance temperatures will be above normal across Montana

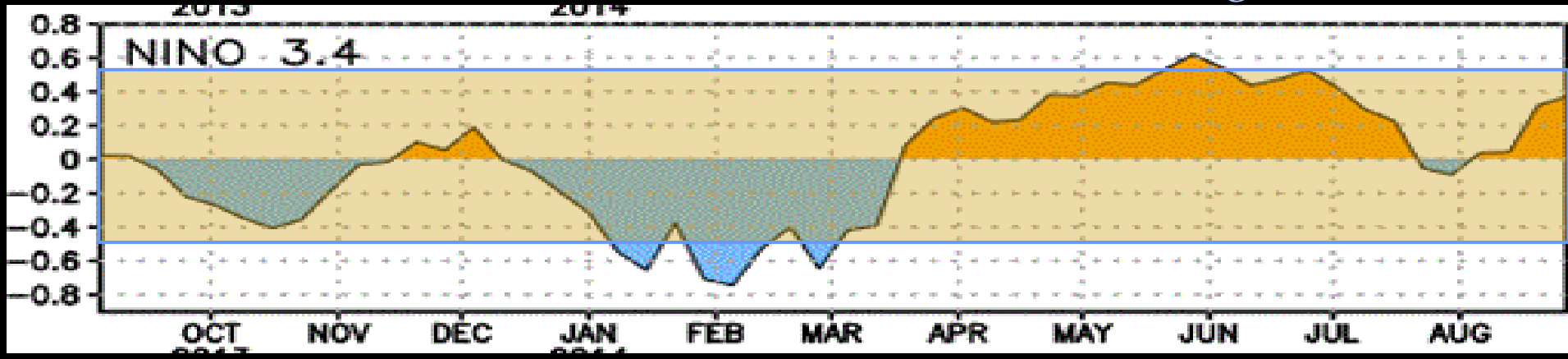
Precipitation

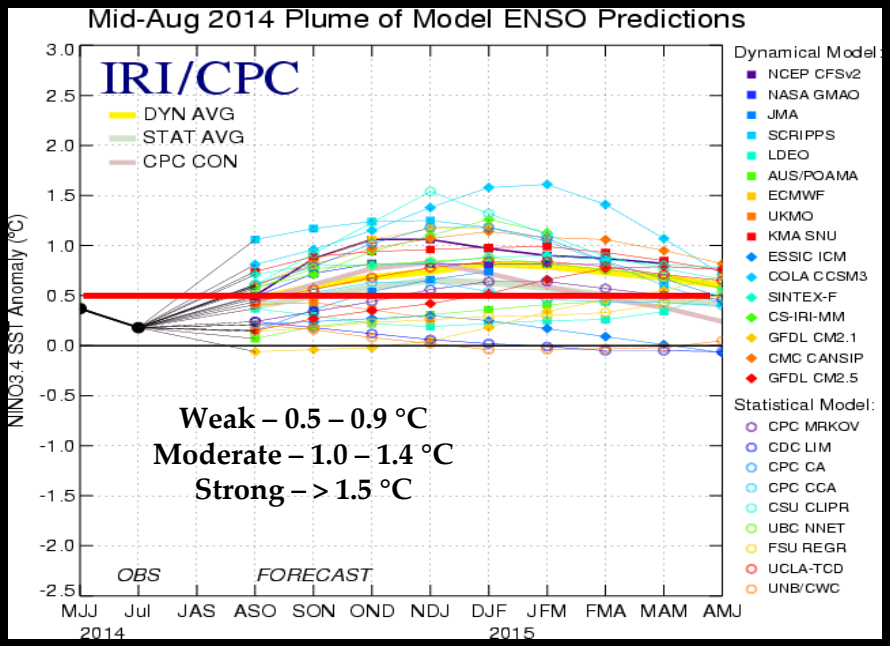


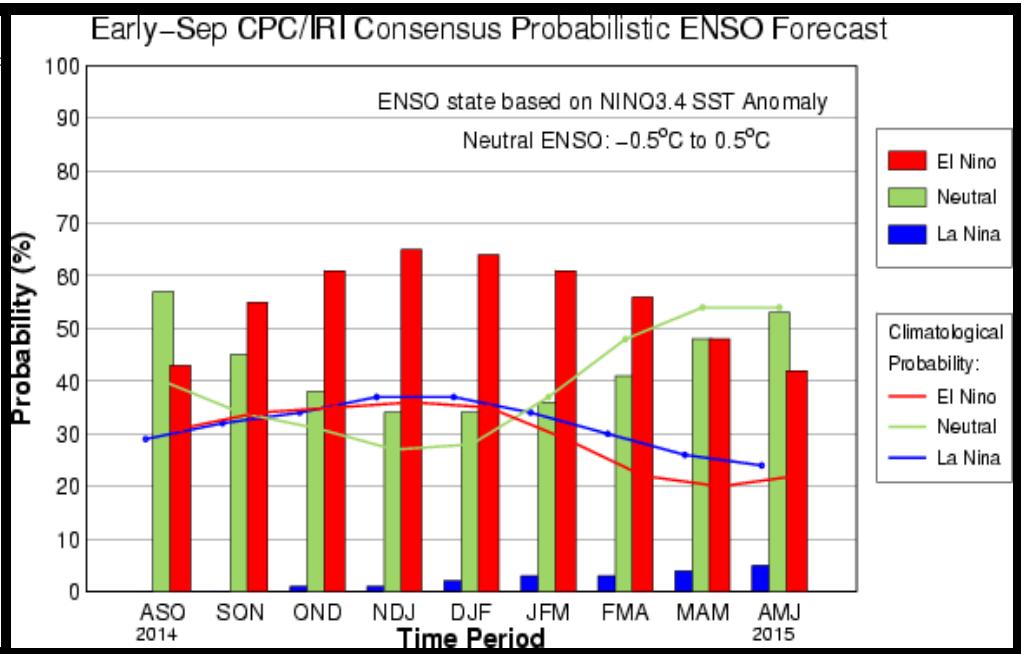
- 33% to 50% chance precipitation will be above normal across most of Montana

El Niño / La Niña

El Niño Watch – 60%-65% chances of El Niño through winter



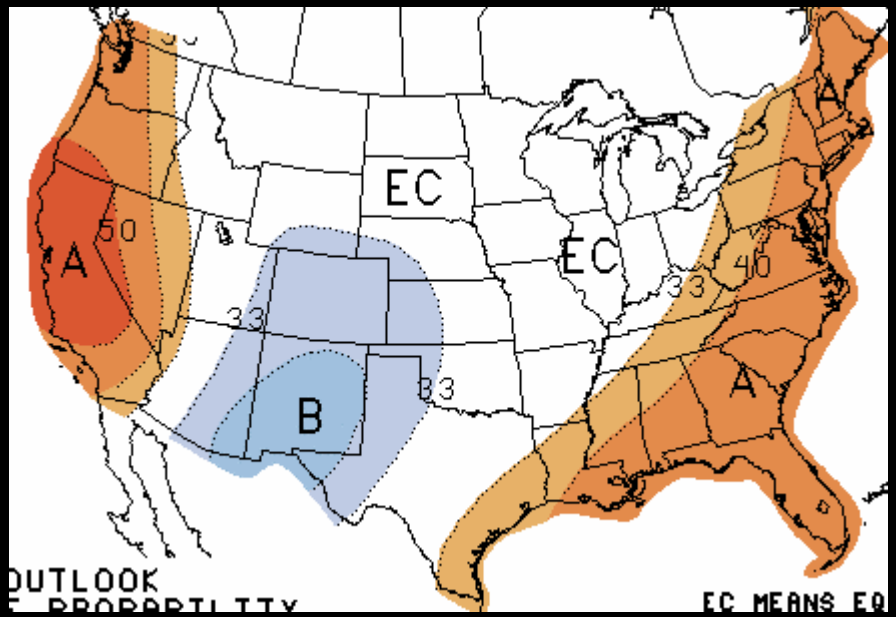




October Outlook

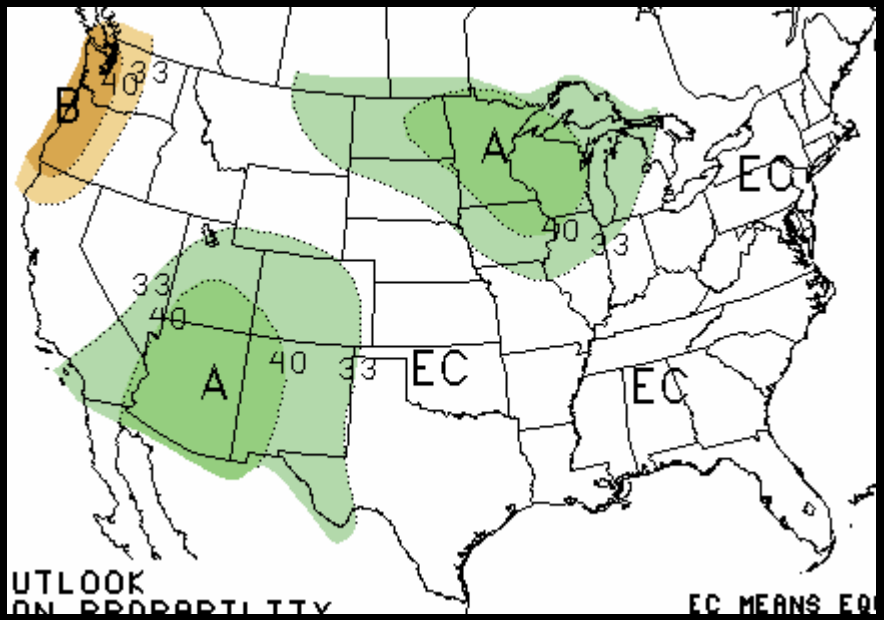
Updated September 18, 2014

Temperature



- Equal chances temperatures will be above, below or near normal across Montana

Precipitation

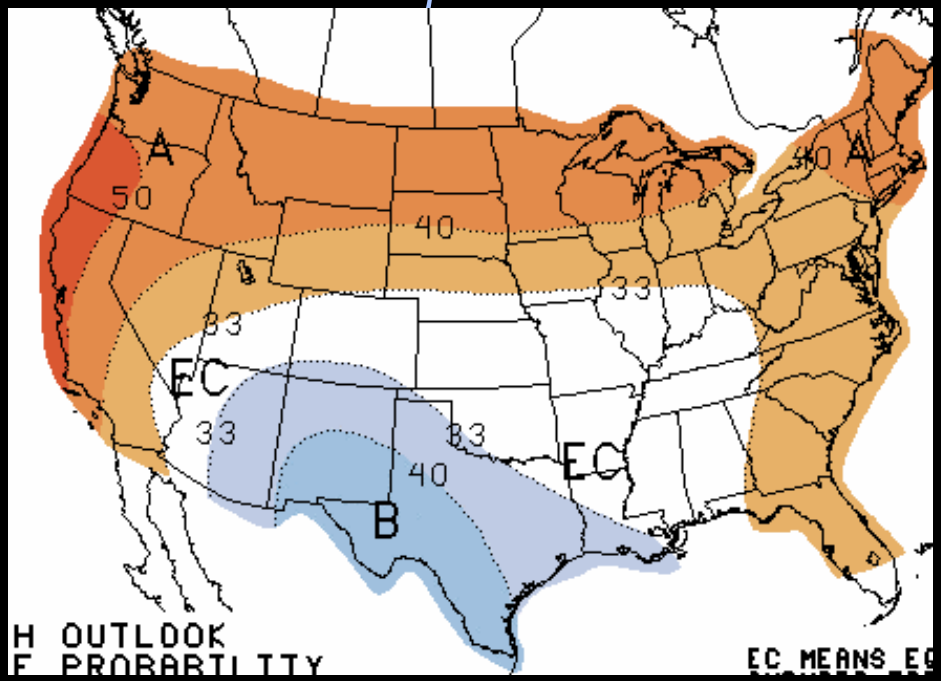


- 33% to 40% chance precipitation will be above normal northeast and east
- Equal chances precipitation will be above, below or near normal remainder of Montana

November – January Outlook

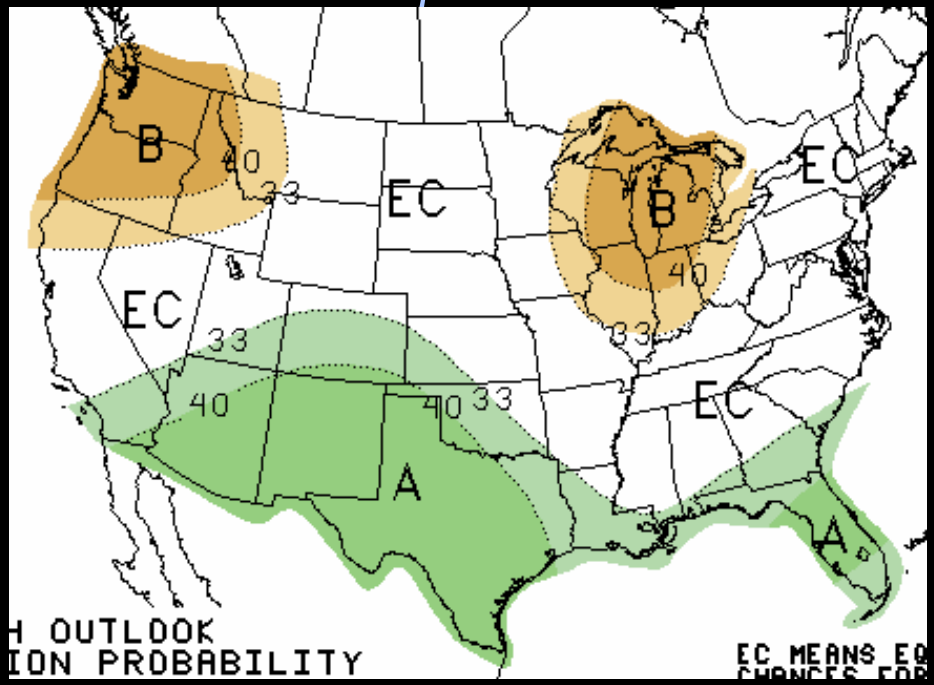
Updated September 18

Temperature



- 40% to 50% chance temperatures will be above normal across Montana

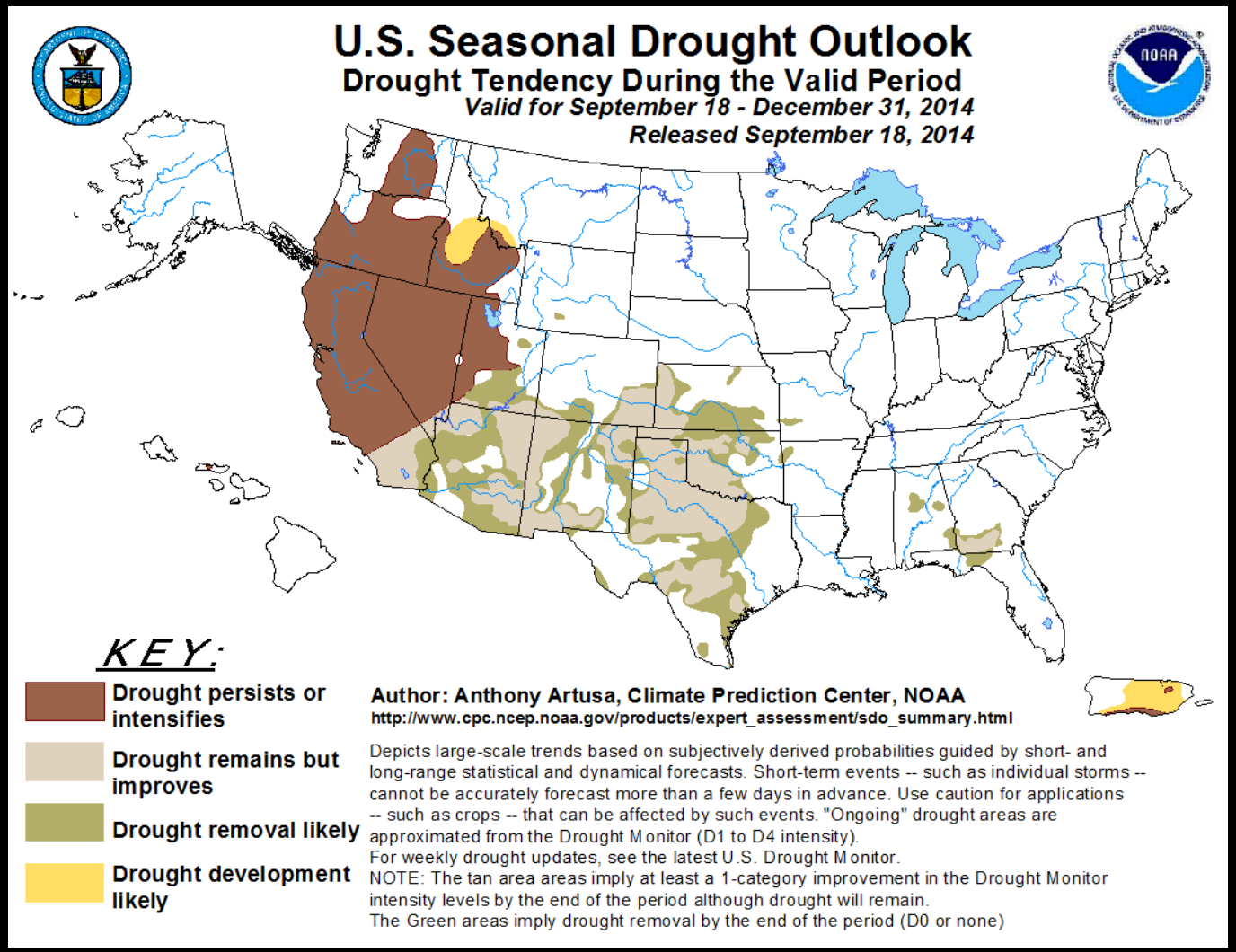
Precipitation



- 33% to 50% chance precipitation will be below normal west and southwest
- Equal chances precipitation will be above, below or near normal central and east Montana

Drought Outlook through December

Issued September 18



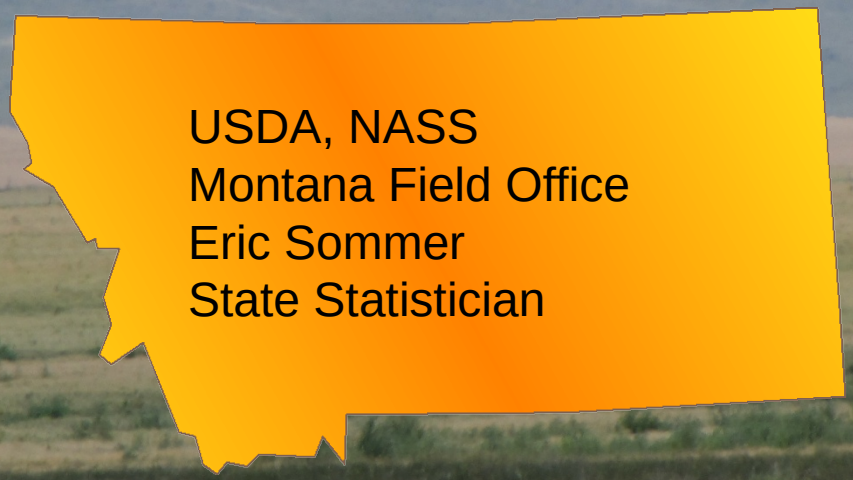
- Drought area in far southwest Montana expected to persist/intensify

In Summary...

- Well(!) above normal precipitation in August
  - *Much of north central, central, and eastern Montana received over 4 inches*
  - *Widespread flooding*
- September bringing higher percent of normal precipitation north and south central
  - *Already seeing some snow from mountains out onto the plains*
- Still better chances for the development of El Niño conditions
  - *May be a weak rather than moderate or strong event*
- Climate Outlook for October shows equal chances for above, below, or near normal precipitation across most of Montana.
  - *Better chances for above normal precipitation northeast and east*
- November through December Outlook shows better chances for below normal precipitation west and southwest
  - *Equal chances central and east*


weather.gov
weather.gov/billings
weather.gov/glasgow
weather.gov/missoula
weather.gov/greatfalls
Find us on
Facebook

Montana Drought & Water Supply Advisory Committee



USDA, NASS
Montana Field Office
Eric Sommer
State Statistician

Crop Weather Report
Week Ending September 14, 2014

- Early Winter Storm during the week
  - Scattered rain showers in the valleys
  - Scattered snow showers in the higher elevations
- Topsoil moisture conditions at 87 percent adequate and surplus
  - Above last year's 69 percent and the five-year average of 44 percent
- Subsoil moisture conditions at 85 percent adequate and surplus
  - Above last year's 61 percent and the five-year average of 47 percent

Topsoil Moisture

Week Ending September 14, 2014

	This week	Last week	Last year	5-yr Avg.
Very short	2%	2%	8%	22%
Short	11%	11%	23%	34%
Adequate	72%	70%	62%	39%
Surplus	15%	17%	7%	5%

Subsoil Moisture

Week Ending September 14, 2014

	This week	Last week	Last year	5-yr Avg.
Very short	3%	3%	12%	20%
Short	12%	13%	27%	33%
Adequate	73%	73%	56%	45%
Surplus	12%	11%	5%	2%

Crop Progress Percent
Week Ending September 14, 2014

	This week	Last week	Last year	5-yr Avg.
Spring Wheat harvested	73%	66%	82%	77%
Durum Wheat harvested	38%	29%	39%	60%

Crop Progress Percent
Week Ending September 14, 2014

	This week	Last week	Last year	5-yr Avg.
Barley				
harvested	93%	89%	98%	84%
Oats				
harvested	89%	85%	90%	89%

Crop Progress Percent
Week Ending September 14, 2014

	This week	Last week	Last year	5-yr Avg.
Dry Peas				
harvested	94%	90%	96%	97%
Lentils				
harvested	86%	84%	80%	92%

Crop Progress Percent
Week Ending September 14, 2014

	This week	Last week	Last year	5-yr Avg.
Potatoes				
harvested	2%	na	12%	13%
Corn for Silage				
harvested	29%	8%	22%	23%

Durum Wheat Crop Condition
Week Ending September 14, 2014

	Very poor	Poor	Fair	Good	Excellent
This week	8%	14%	33%	44%	1%
Last week	5%	11%	34%	49%	1%
Last year	15%	17%	47%	19%	2%
5-yr Avg.	na	na	na	na	na

Potatoes Crop Condition
Week Ending September 14, 2014

	Very poor	Poor	Fair	Good	Excellent
This week	0%	0%	5%	73%	22%
Last week	0%	0%	5%	73%	22%
Last year	13%	12%	19%	29%	27%
5-yr Avg.	na	na	na	na	Na

Corn Crop Condition
Week Ending September 14, 2014

	Very poor	Poor	Fair	Good	Excellent
This week	0%	3%	30%	51%	16%
Last week	0%	3%	30%	52%	15%
Last year	3%	5%	35%	37%	20%
5-yr Avg.	2%	5%	30%	47%	16%

Sugar Beets Crop Condition
Week Ending September 14, 2014

	Very poor	Poor	Fair	Good	Excellent
This week	1%	1%	15%	43%	40%
Last week	1%	1%	12%	46%	40%
Last year	0%	9%	33%	43%	15%
5-yr Avg.	2%	7%	28%	44%	19%

Winter Wheat Seeding
Week Ending September 14, 2014

	This week	Last week	Last year	5-yr Avg.
Winter Wheat				
seeded	23%	3%	19%	16%

Hay – Second Cutting
Week Ending September 14, 2014

	This week	Last week	Last year	5-yr Avg.
Alfalfa Hay				
2nd Cutting	91%	87%	91%	91%
Other Hay				
2nd Cutting	75%	66%	84%	82%

Movement from Summer Ranges
Week Ending September 14, 2014

	This week	Last week	Last year	5-yr Avg.
Cattle & Calves				
Moved	17%	4%	20%	22%
Sheep & Lambs				
Moved	23%	11%	27%	27%

Range & Pasture Feed Condition
Week Ending September 14, 2014

	Very poor-poor	Fair	Good	Excellent
This week	16%	32%	38%	14%
Last week	17%	33%	37%	13%
Last year	20%	34%	39%	7%
5-yr Avg.	31%	33%	29%	7%

Summary
Week Ending September 14, 2014

- Harvest of most spring small grains nearing completion
  - A great deal of wheat and barley crops experienced weather related damage
  - Durum wheat harvest lagging behind, due to recent storms in northeast part of the state
  - Early Winter storm halted harvest and killed some immature crops
- Winter wheat seeding for 2014 crop
  - Ahead of last year and the five-year average

Releases

- September Hog report will be released September 26, 2014
- Small Grains Summary and September Grain Stocks will be released September 30, 2014

USDA, NASS, Montana Field Office

Eric Sommer, State Statistician

1-800-835-2612 or 406-441-1240

Email: nass-mt@nass.usda.gov

www.nass.usda.gov/mt/

http://www.nass.usda.gov/Statistics_by_State/Montana Publications/Crop_Progress_&_Condition/index.asp

Governor's Drought & Water Supply Advisory Committee

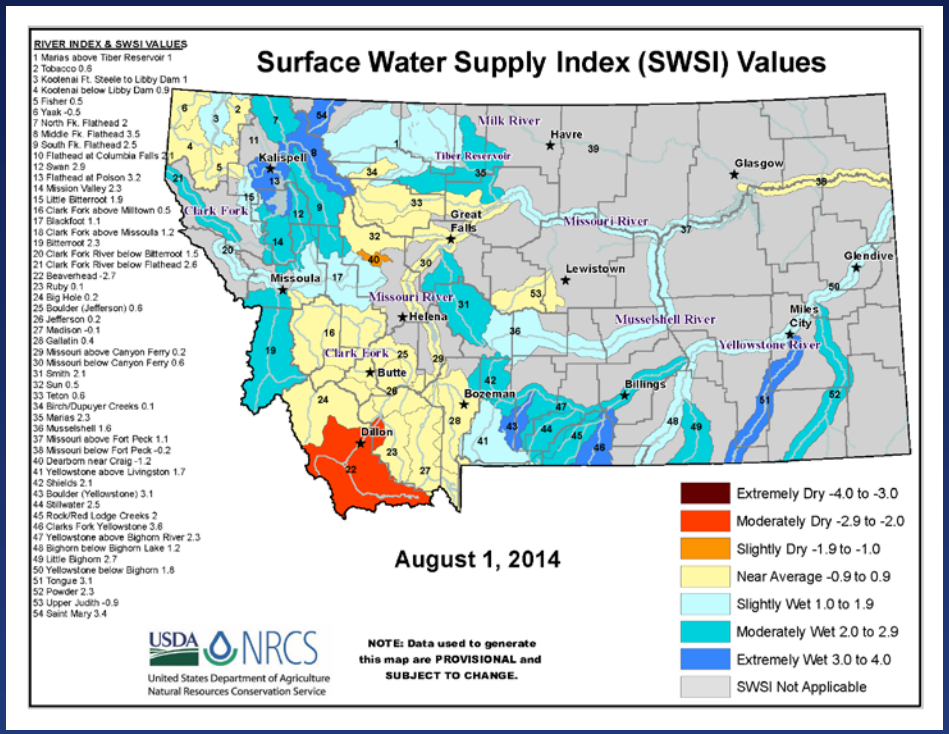
Mountain Precipitation and Water Supply Report

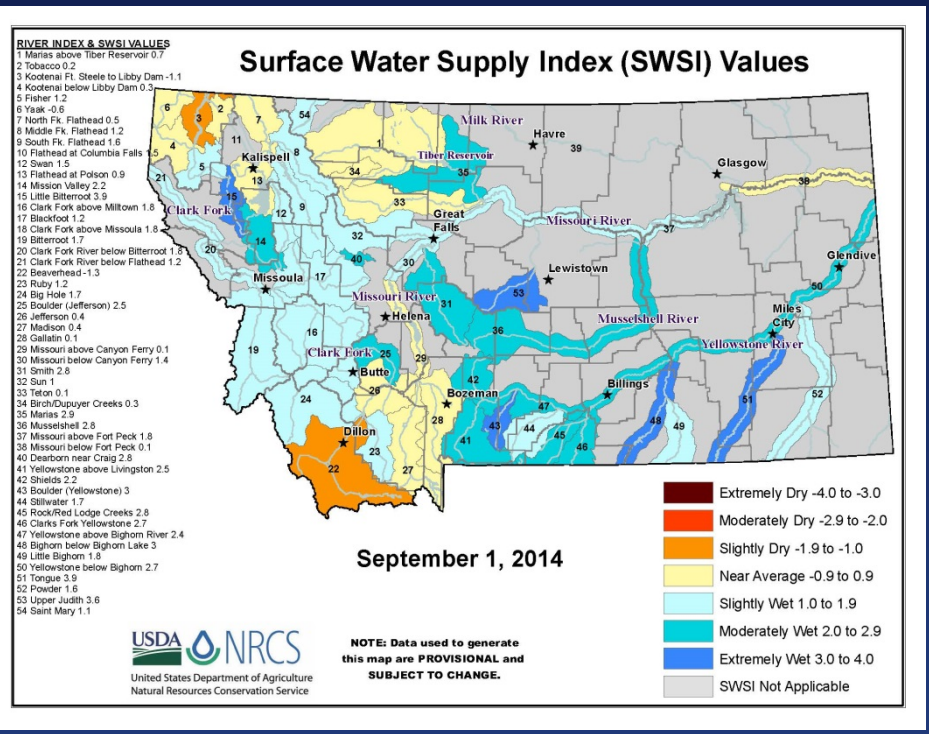
September 18th, 2014

Lucas Zukiewicz
Water Supply Specialist
USDA NRCS Montana Snow Surveys
Lucas.Zukiewicz@mt.usda.gov
(406) 587-6843
http://www.nrcs.usda.gov/wps/portal/nrcs/main/mt/snow/

Photo: Blackwater SNOTEL
Cody, WY
September 11th, 2014

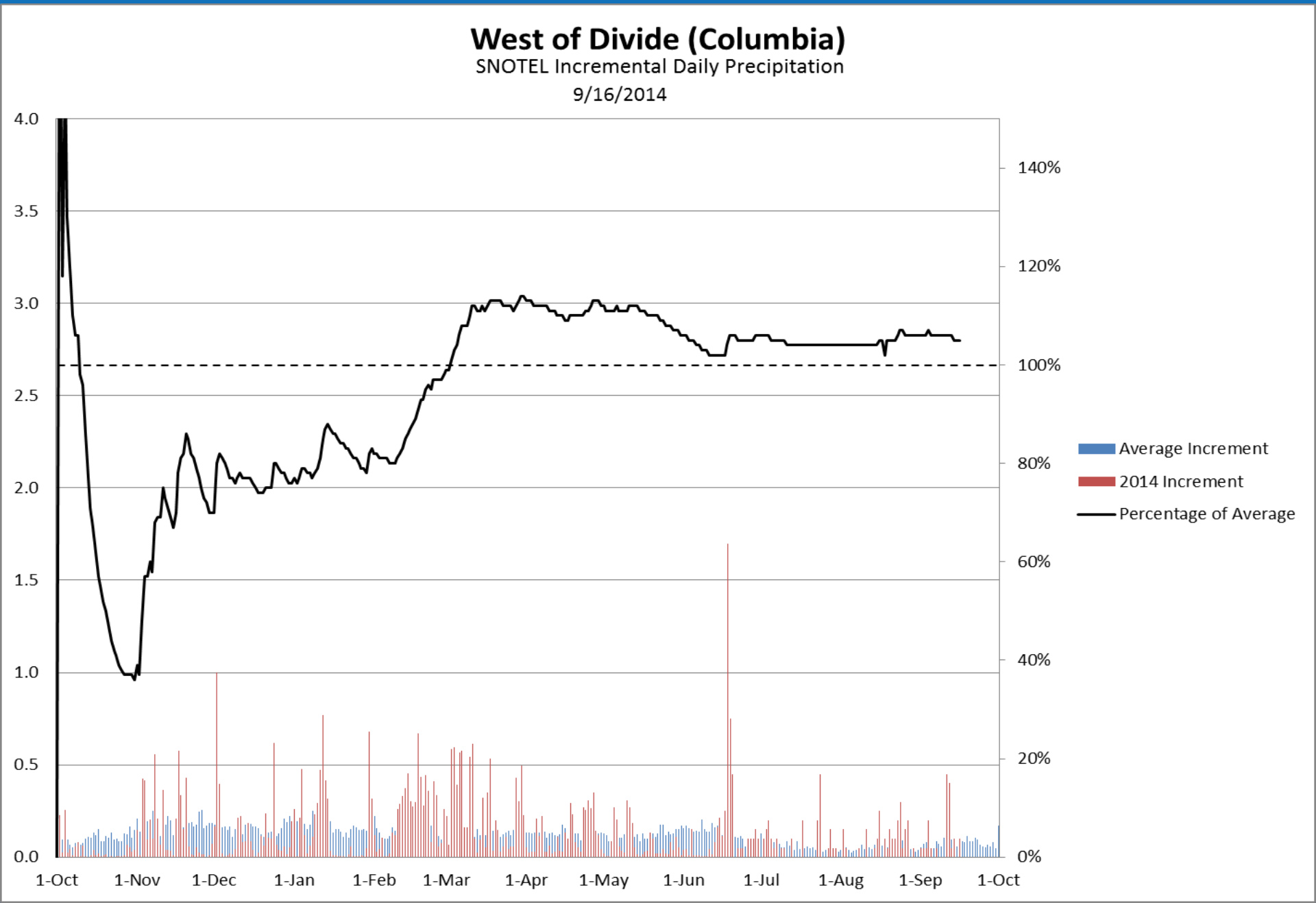
Montana Snow Survey



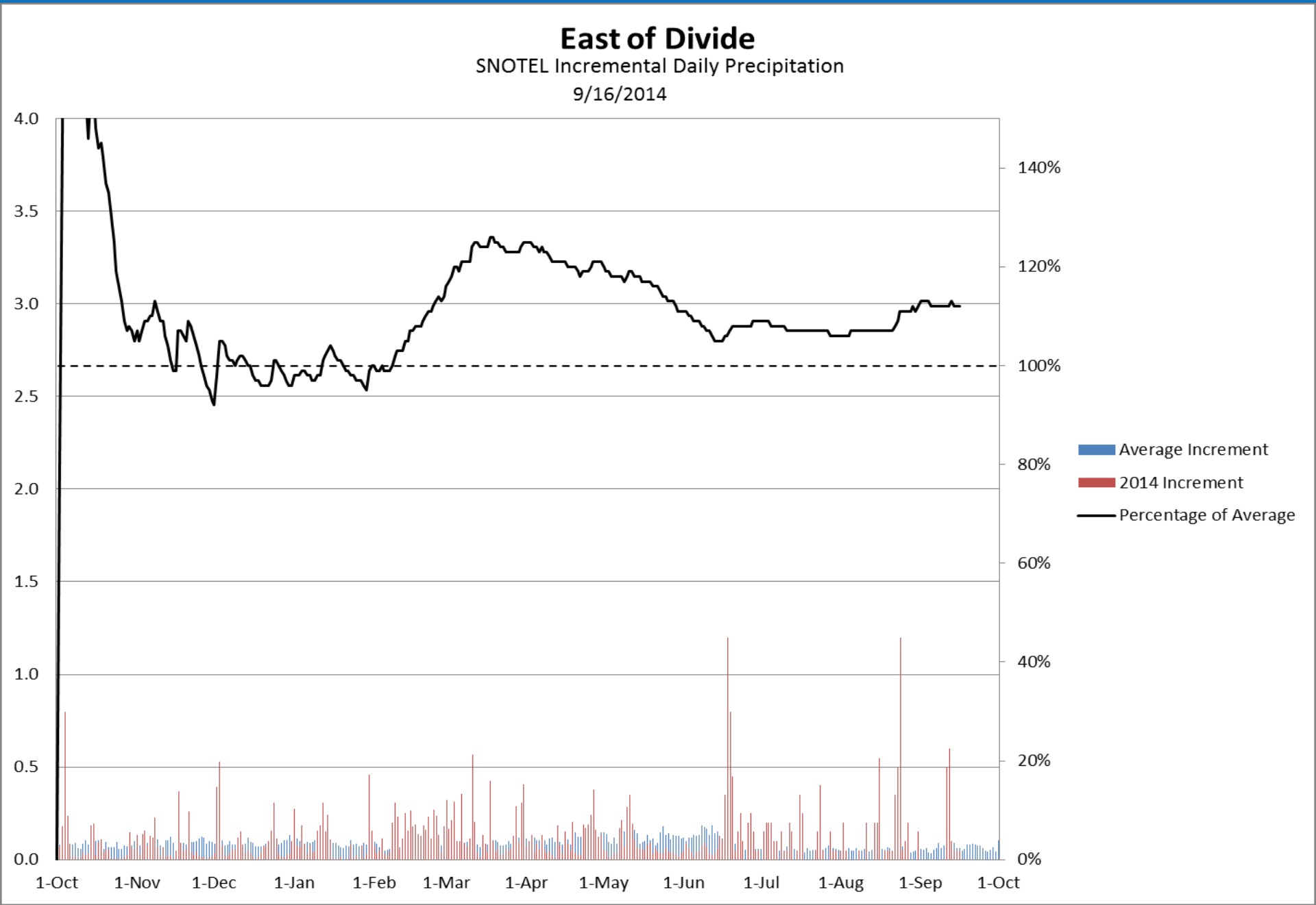


- Overall, surface water supply and storage has been ample this spring/summer
- Two basin SWSIs slightly dry conditions(negative on SWSI scale)
  - Kootenai River basin above Libby Dam: -1.1 (influenced by CA releases)
  - Beaverhead River basin: -1.3 (up from -2.7 on August 1st)

Montana Snow Survey



Montana Snow Survey



Montana Snow Survey

USDA NRCS

Mainstem ab Ft Peck Res

SNOTEL Incremental Daily Precipitation

9/15/2014

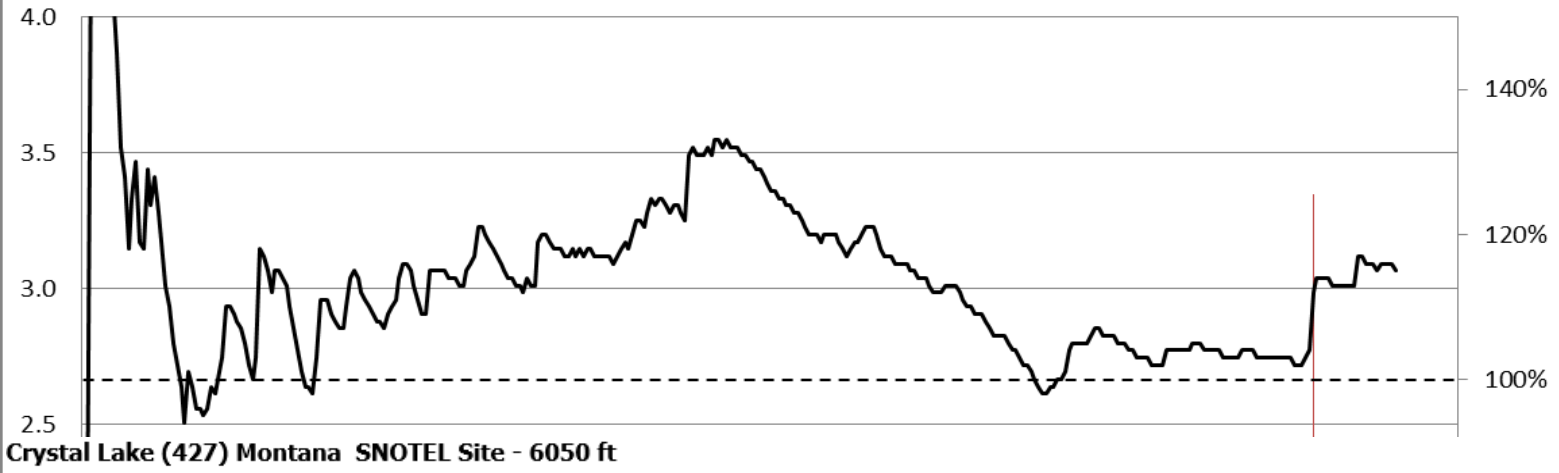
Montana Snow Survey

USDA NRCS

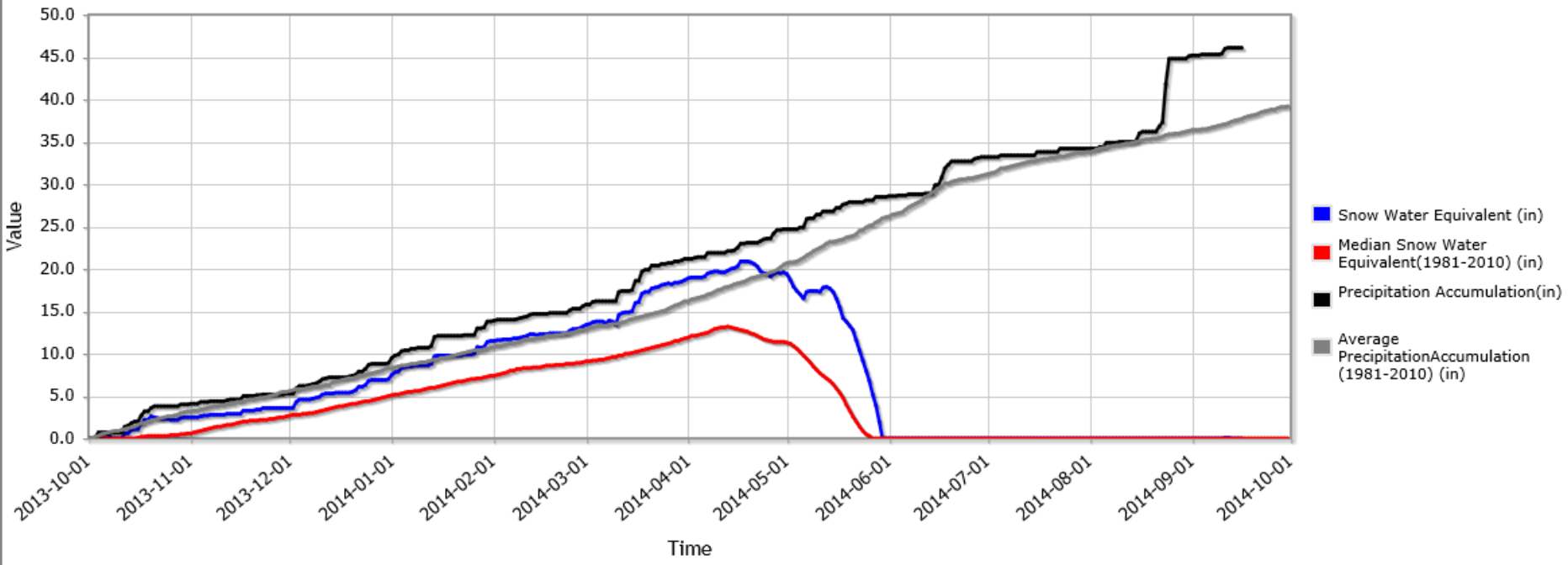
Smith-Judith-Musselshell

SNOTEL Incremental Daily Precipitation

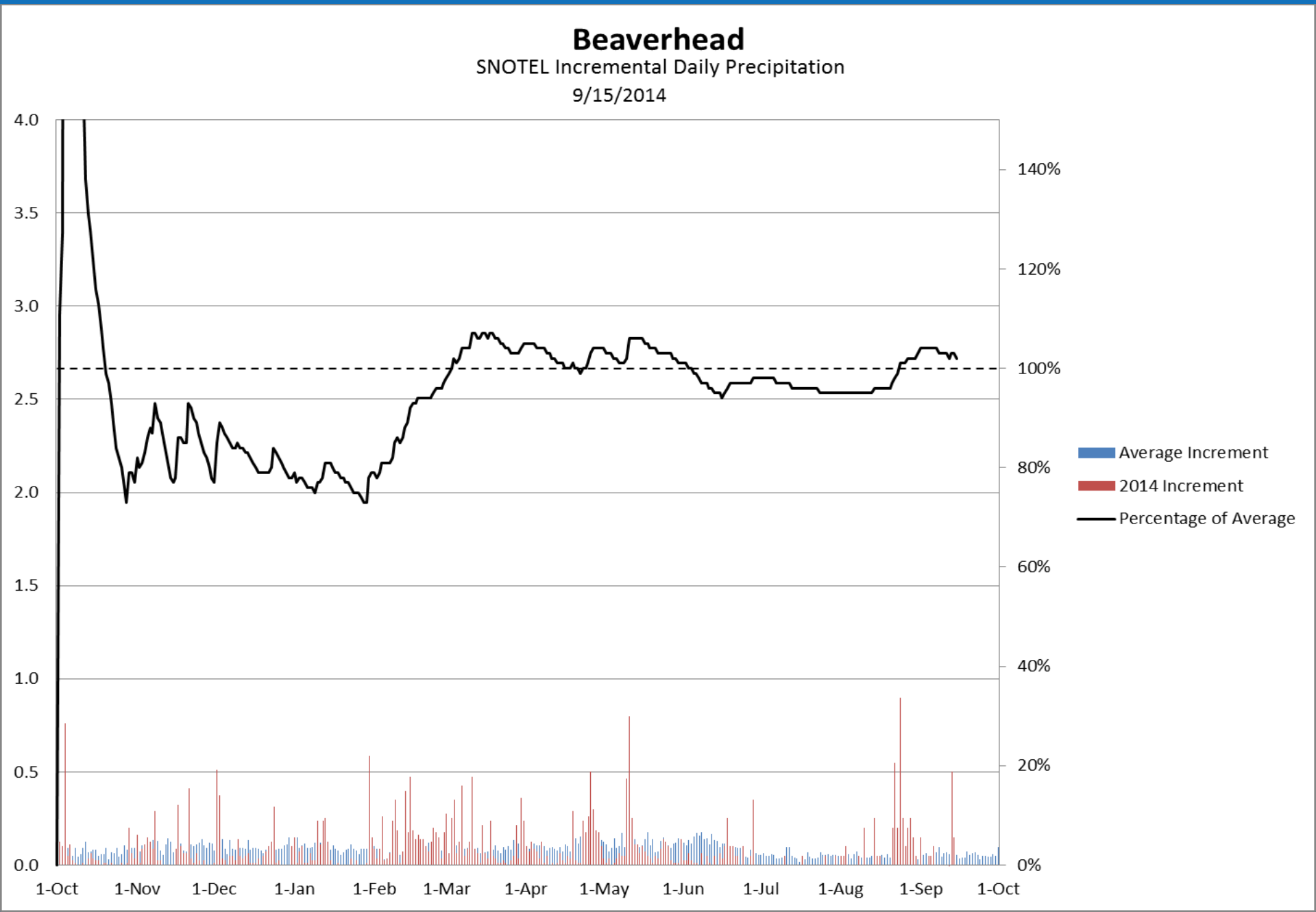
9/15/2014



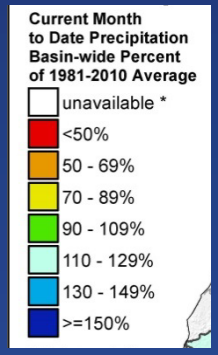
Crystal Lake (427) Montana SNOTEL Site - 6050 ft

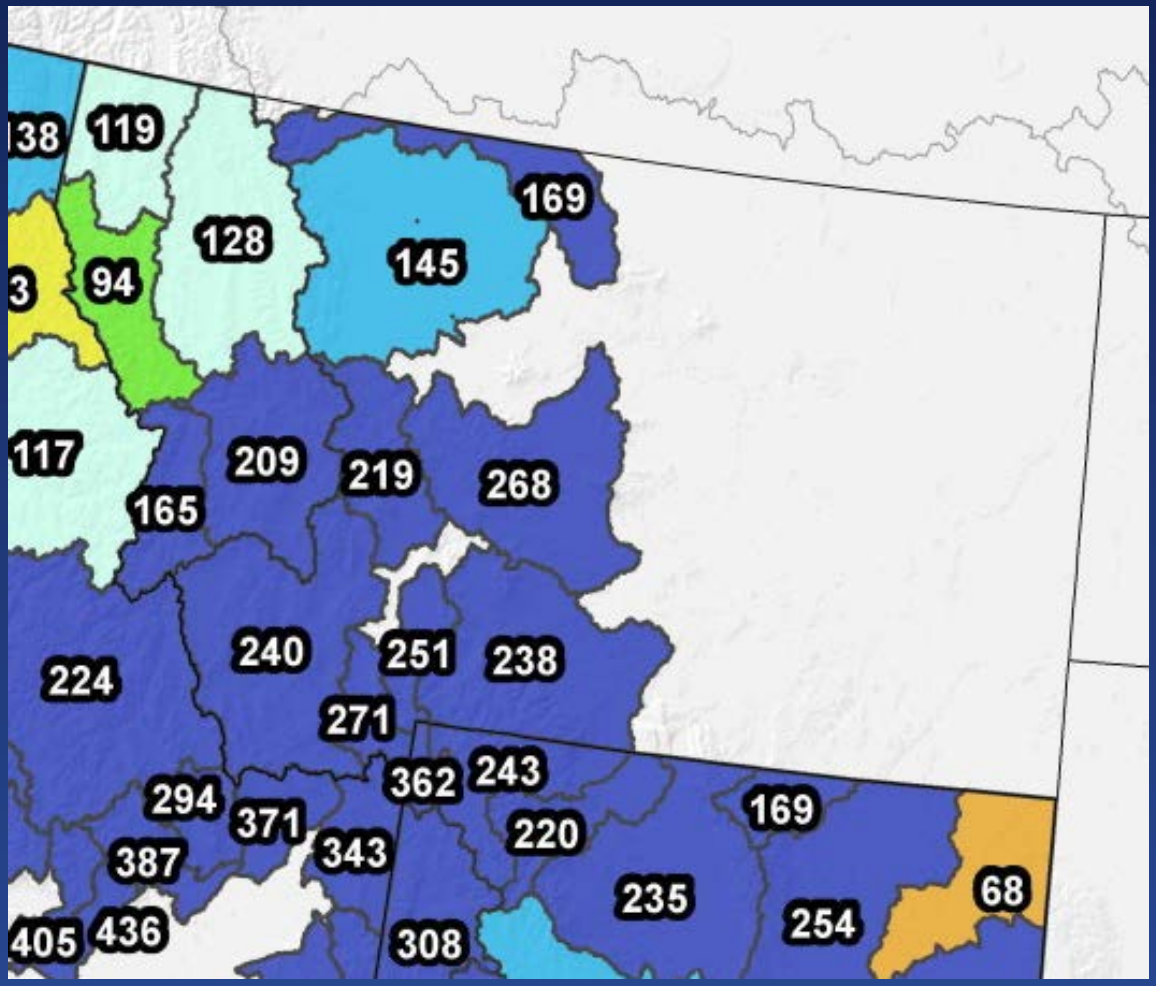


Montana Snow Survey



August Mountain Precipitation



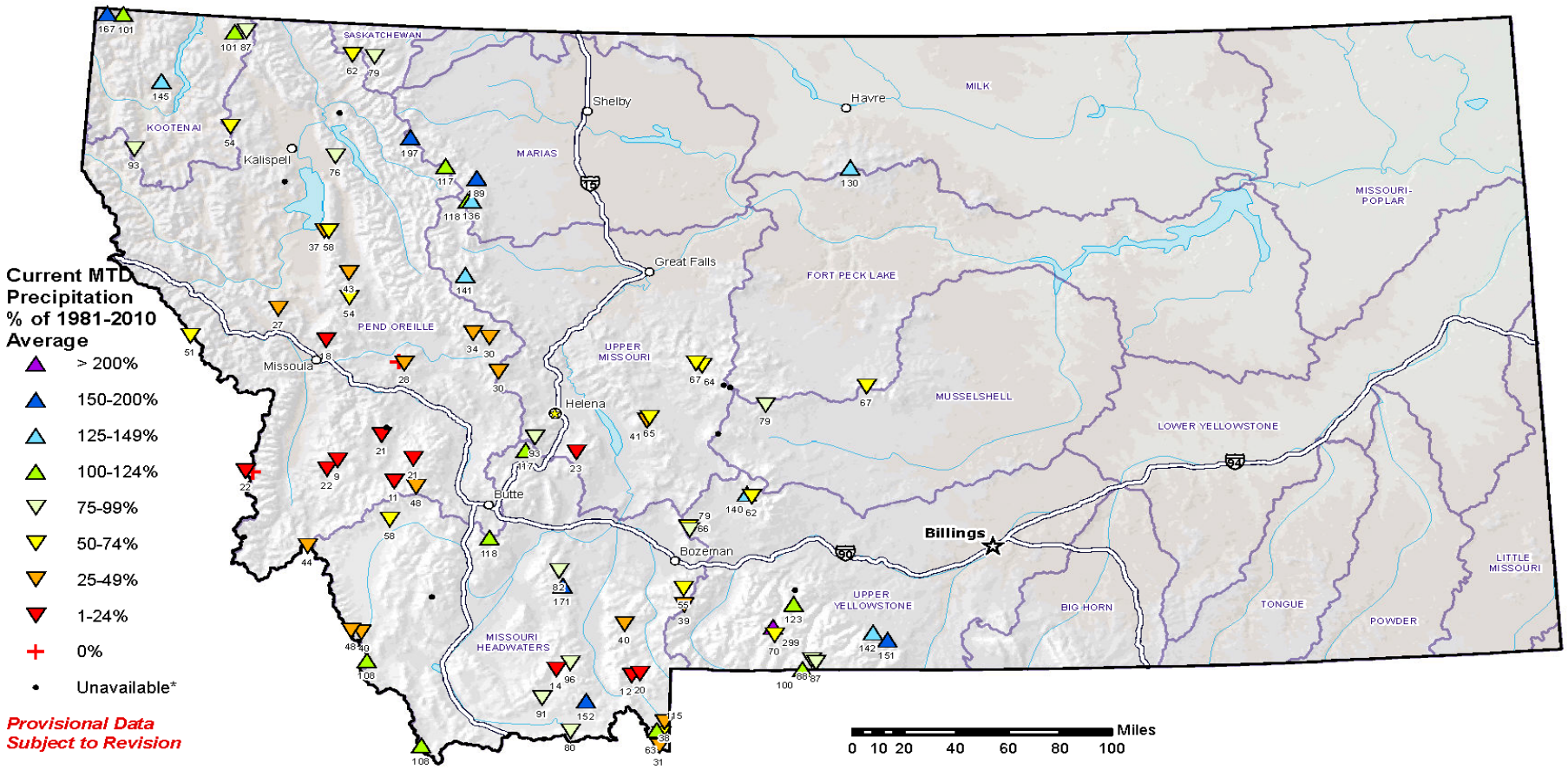


Montana Snow Survey

USDA NRCS

Montana
SNOTEL Month to Date (MTD) Precipitation
% of Normal

Sep 16, 2014



Prepared by:
USDA/NRCS National Water and Climate Center
Portland, Oregon
http://www.wcc.nrcs.usda.gov

** Data unavailable at time of posting or unavailable long-term normal.*

August 23-26th Precipitation Event

Highlights:

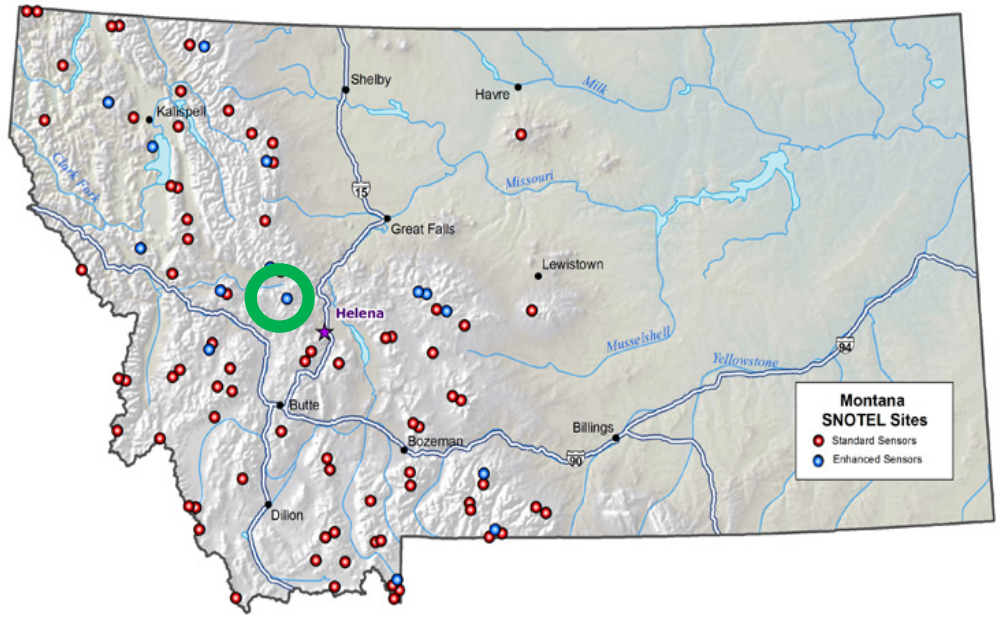
- Crystal Lake SNOTEL in the Snow Range received 8.6” of precipitation during the event. The month of August yielded 11.0”, or 423% of average precipitation.

- The Smith-Judith Musselshell River Basin received 273 percent of normal August mountain precipitation. The water year to date percentage of average rose from 102 percent of average to 114 percent during this one event.

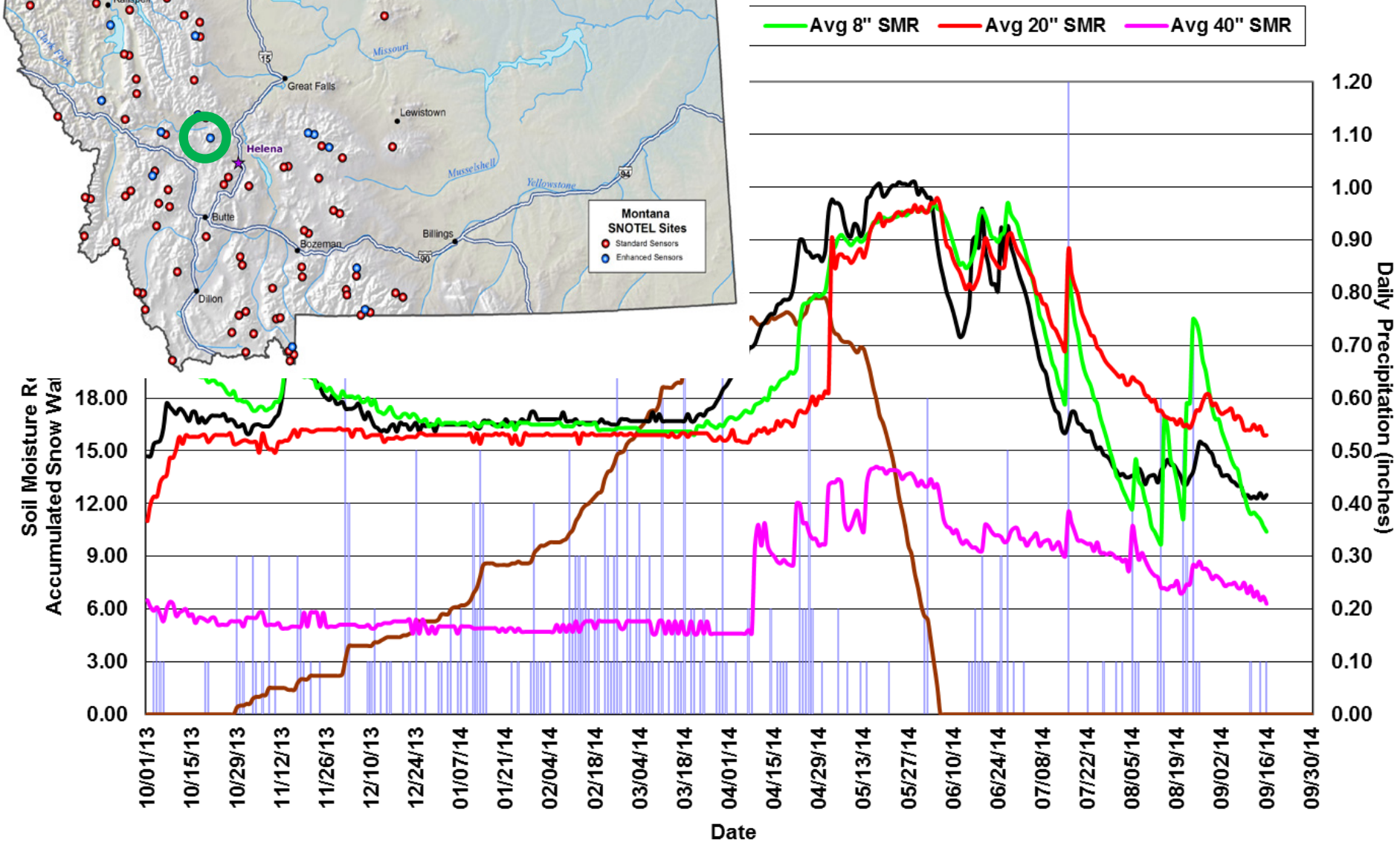
- Parched SW Montana SNOTEL locations in the upper Beaverhead drainage received 1.0 to 1.5” of precipitation during the event. Since September 1st, this area has been favored for precipitation receiving 140% to 205% of average.

SNOTEL site	Precip (in)	Location
Crystal Lake	8.6	Big Snowy Range
Rocky Boy	4.7	Sweetgrass Hills
Rocker Peak	4.7	Boulder Mountains
Daisy Peak	4.4	Little Belts

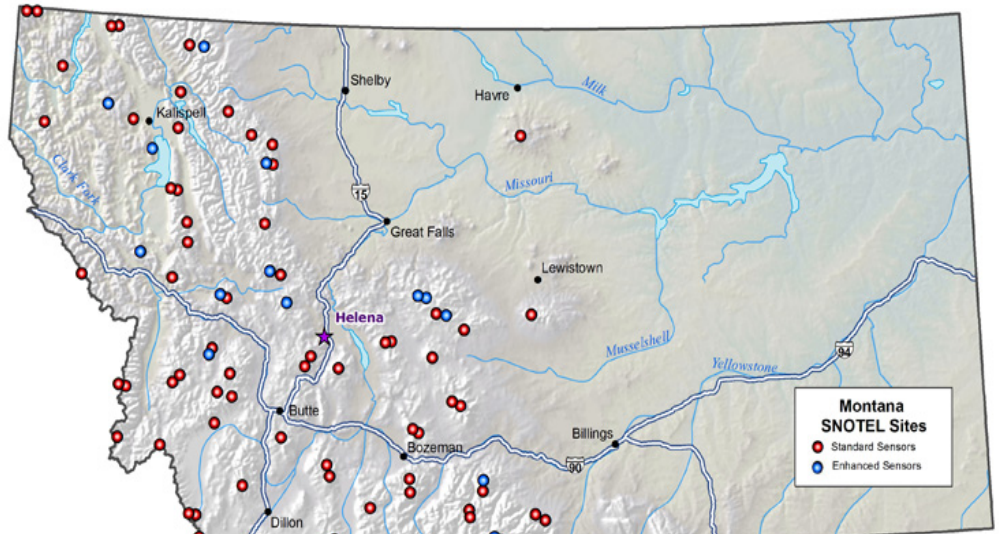
Montana Snow Survey



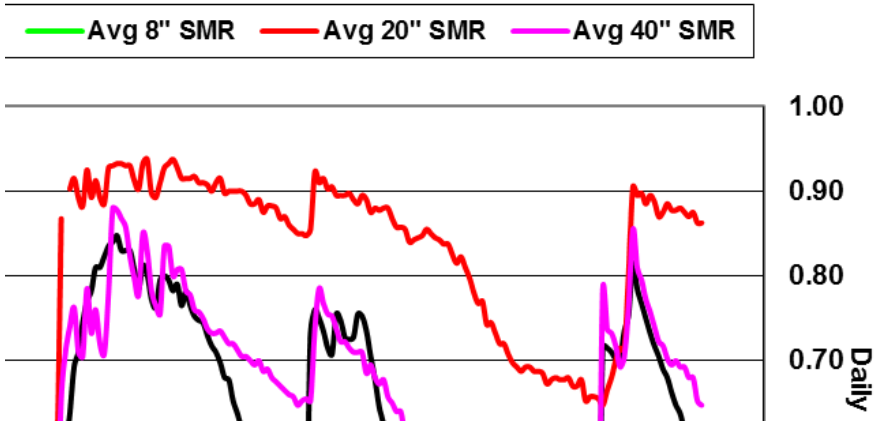
Water Year 2014
ponse Data



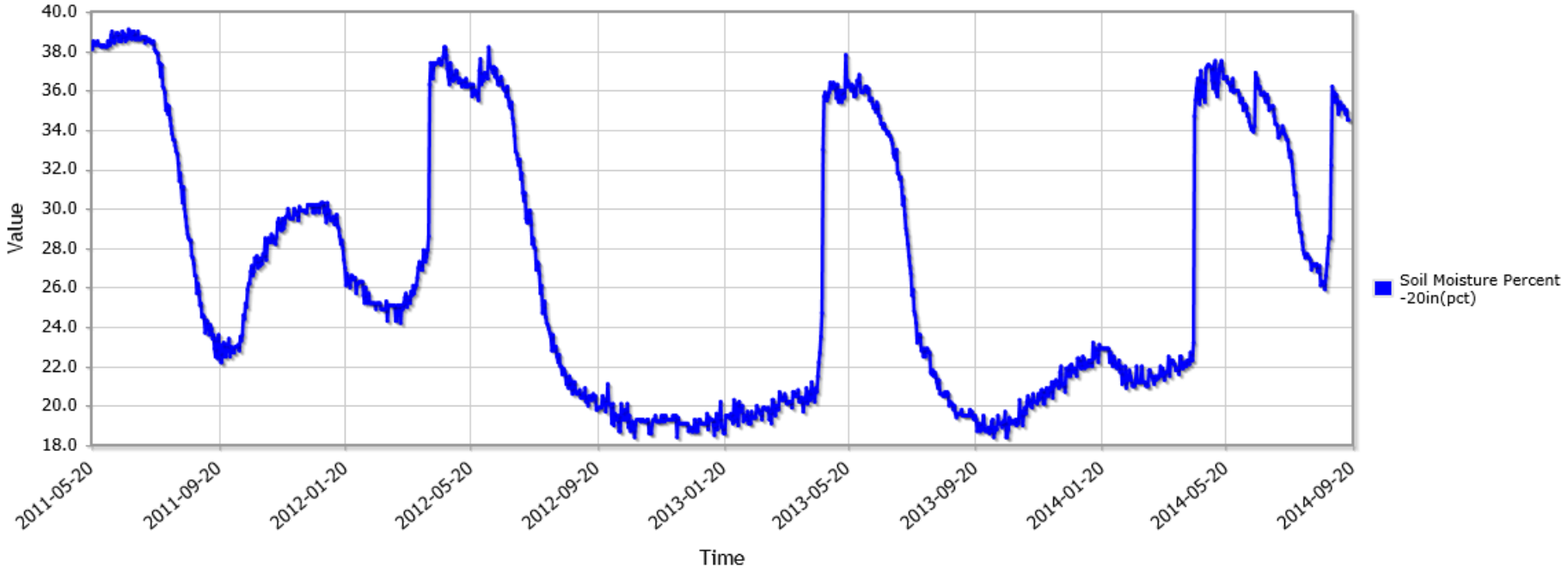
Montana Snow Survey



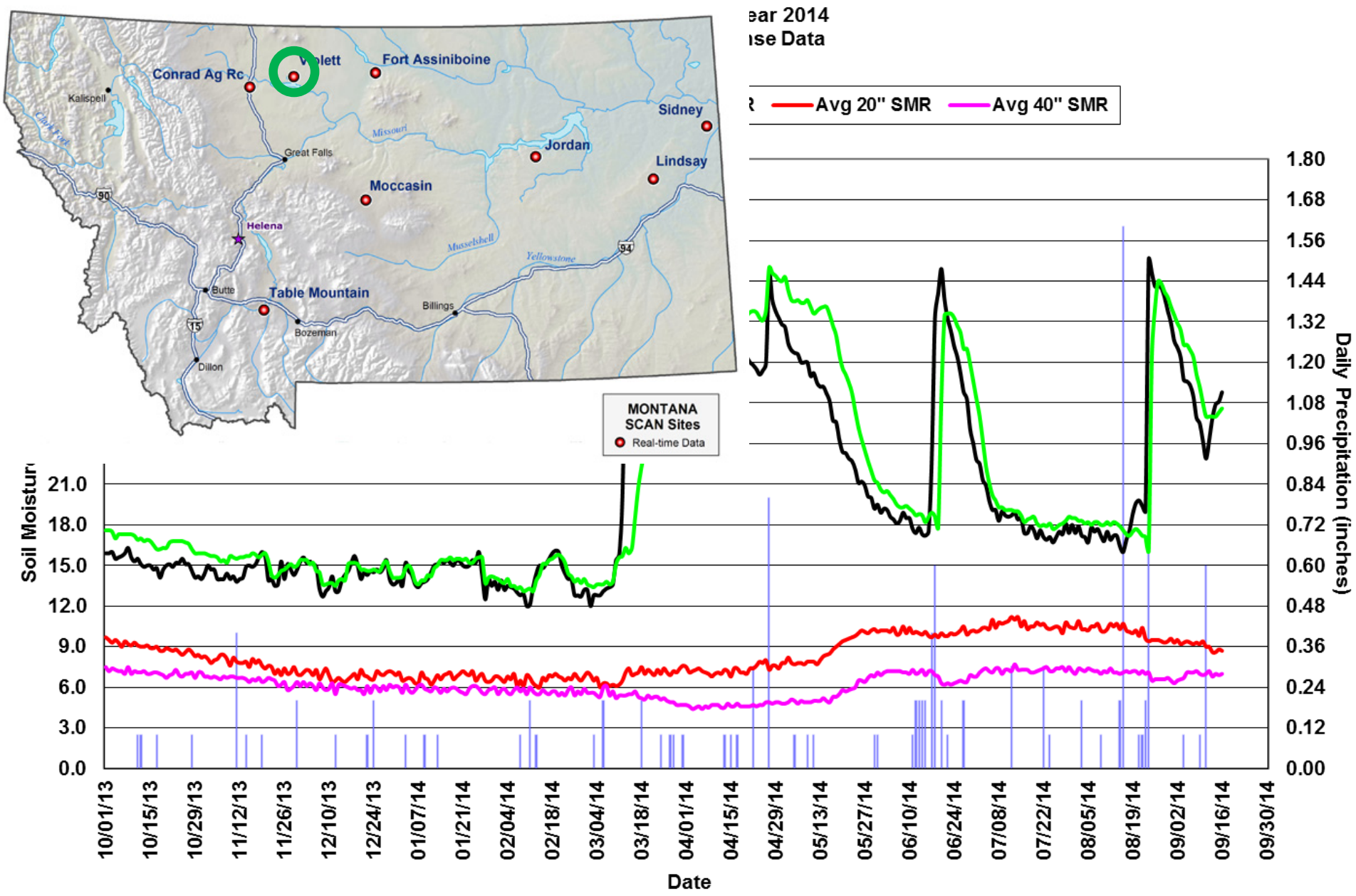
. Water Year 2014
ponse Data



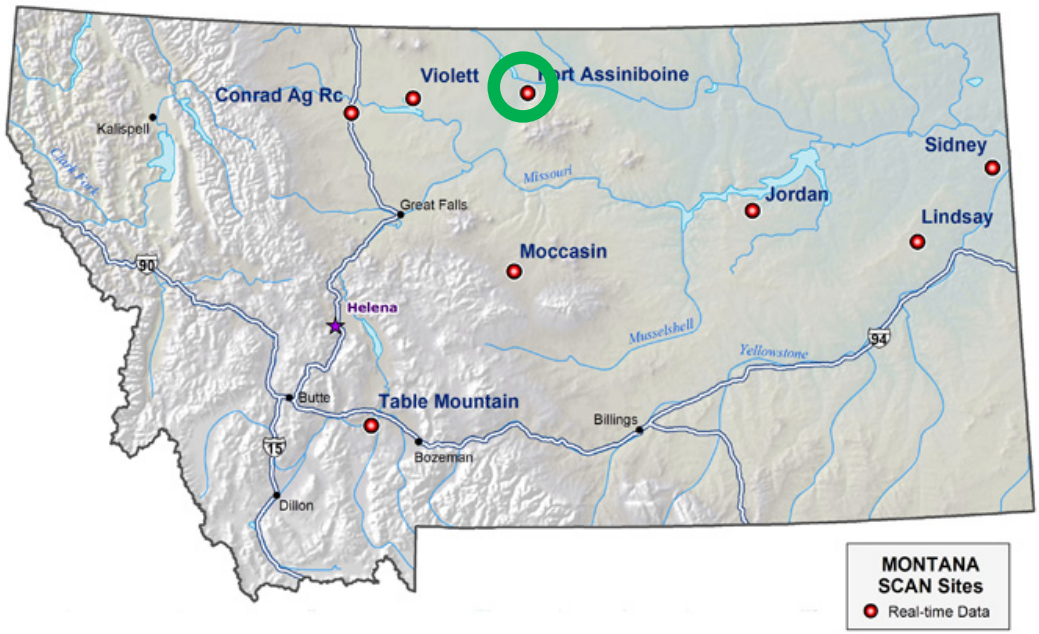
Lakeview Ridge (568) Montana SNOTEL Site - 7400 ft



Montana Snow Survey



Montana Snow Survey



ater Year 2014
nse Data

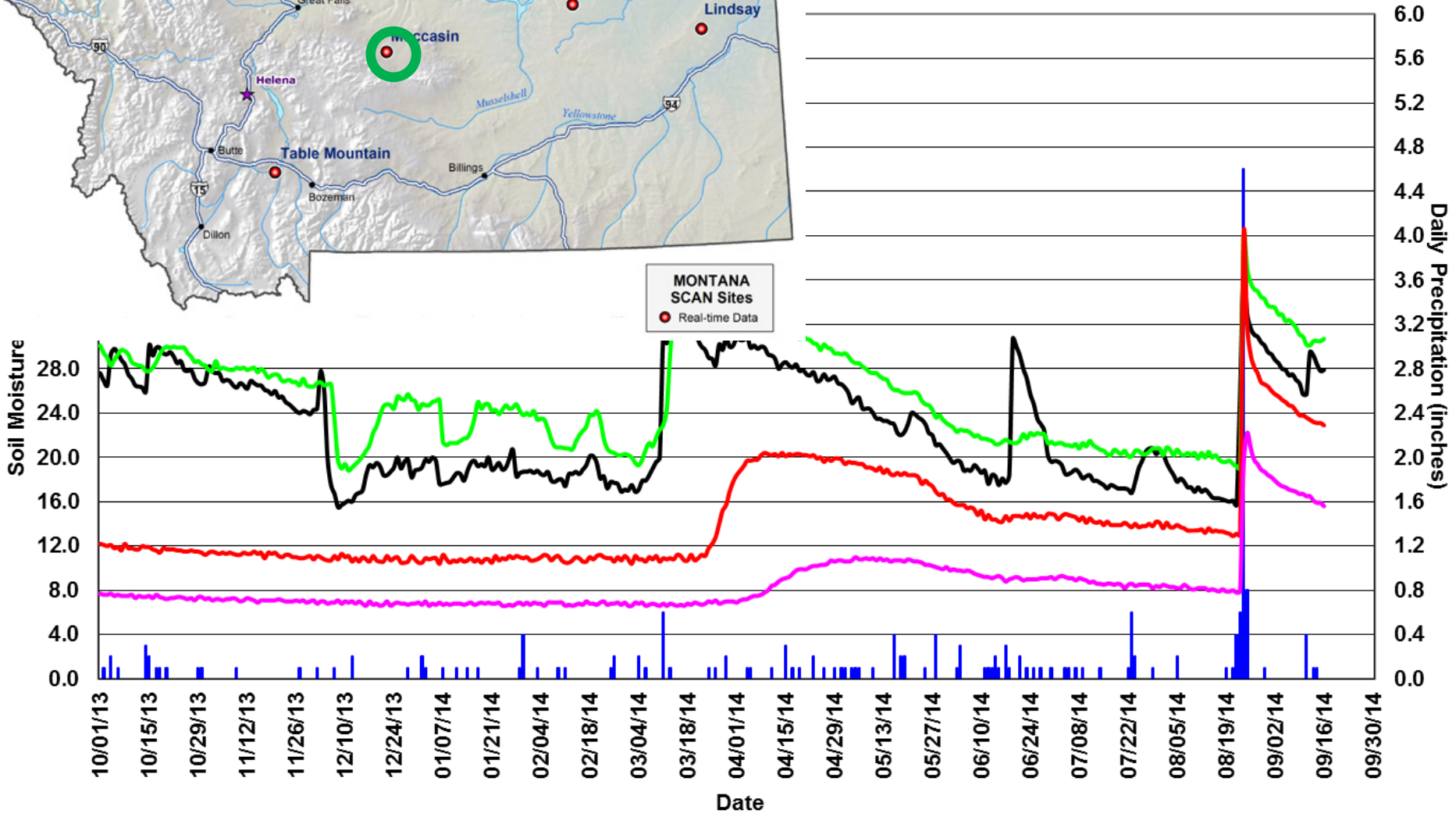
Avg 20" SMR Avg 40" SMR

Soil Moisture

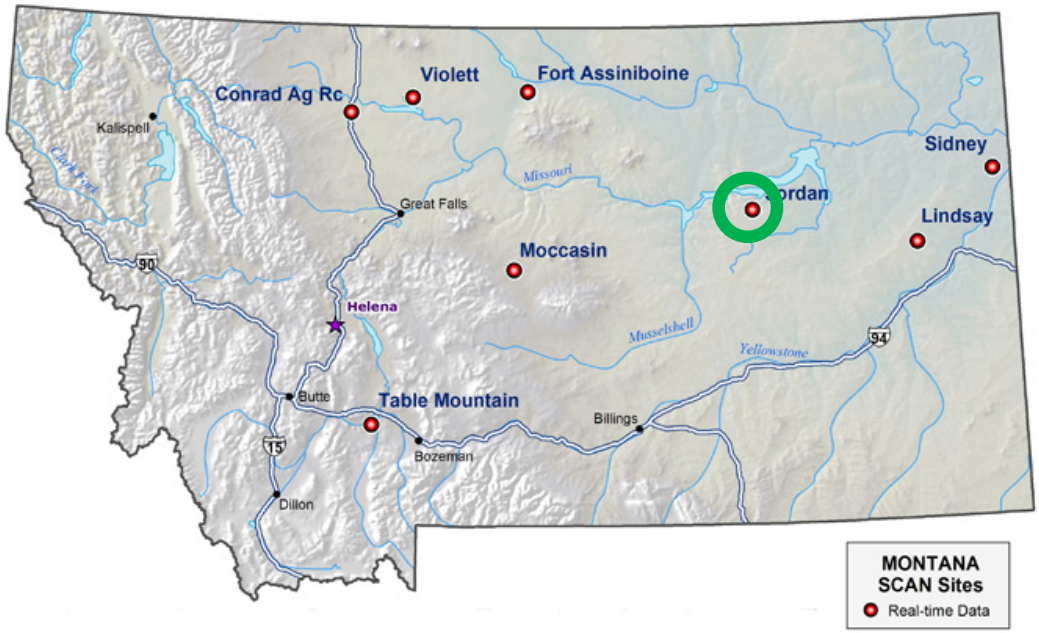
Daily Precipitation (inches)

Date

Montana Snow Survey



Montana Snow Survey



ear 2014
ıse Data

Avg 20" SMR Avg 40" SMR

Soil Moisture

30.0
27.0
24.0
21.0
18.0
15.0
12.0
9.0
6.0
3.0
0.0

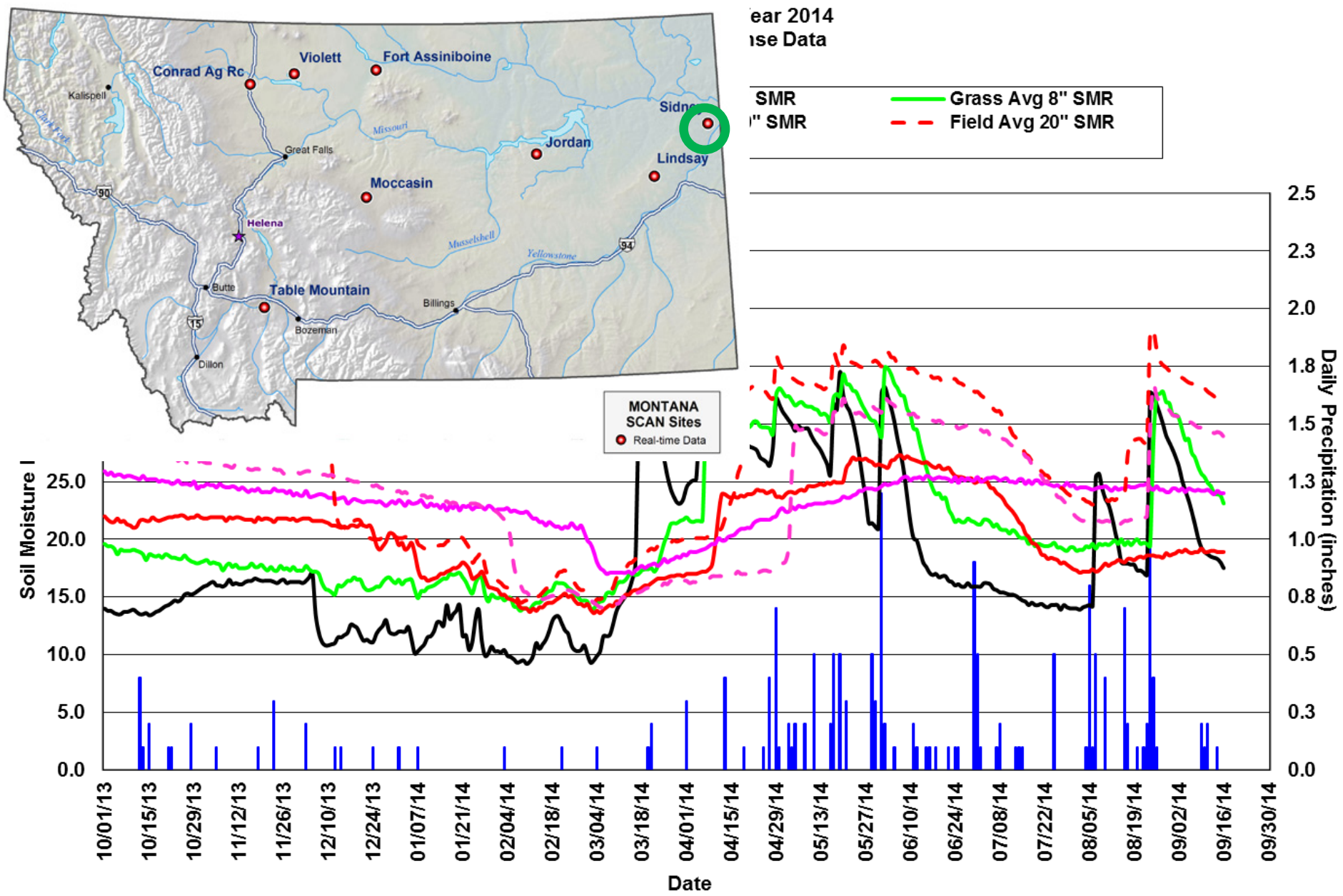
Daily Precipitation (inches)

3.30
3.15
3.00
2.85
2.70
2.55
2.40
2.25
2.10
1.95
1.80
1.65
1.50
1.35
1.20
1.05
0.90
0.75
0.60
0.45
0.30
0.15
0.00

10/01/13
10/15/13
10/29/13
11/12/13
11/26/13
12/10/13
12/24/13
01/07/14
01/21/14
02/04/14
02/18/14
03/04/14
03/18/14
04/01/14
04/15/14
04/29/14
05/13/14
05/27/14
06/10/14
06/24/14
07/08/14
07/22/14
08/05/14
08/19/14
09/02/14
09/16/14
09/30/14

Date

Montana Snow Survey



Montana Snow Survey

USDA NRCS

Historical Sept 16th Soil Moisture Values

SNOTEL/SCAN Site	2011 20" SMR	2012 20" SMR	2013 20" SMR	2014 20" SMR
Sleeping Woman (Flathead & Lclark)	**2.5**	1.5	0.5	2.2
Nevada Ridge (Upper Clark)	**17.7**	11.3	11.1	15.9
Lakeview Ridge (Beaverhead)	23.4	20.5	19.4	**34.5**
Violett SCAN (native grass)	**13.9**	10.2	10.0	8.7
Fort Assiniboine (native grass)	19.7	18.3	21.9	**30.2**
Moccasin SCAN (native grass)	12.7	11.5	12.8	**22.5**
Jordan SCAN (native grass)	22.1	19.8	22.3	**38.7**
Sidney SCAN (native grass)	15.6	**16.2**	17.7	12.9

*Note that values are un-adjusted for soils types and are a relative index of wetness for sites

Summary

- Precipitation during the end of August and beginning of September have helped to improve the Surface Water Supply Indices in some basins east of the Divide.
- Many mountain weather stations received well above average precipitation during the month of August. The Northwest basins did not fare as well. The first half of September has brought near to slightly below average conditions for most locations.
- Central basins experienced an extreme event between August 22nd and 26th causing flooding on the Musselshell River.
- The last snowfall of the water year occurred on September 11th, 2014!
- Soil moisture values in the eastern half of the state are very high for this time of year due to the large event in August. As we transition into the new water year some surpluses may exist as we accumulate snow.

Montana Snow Survey

The U.S. Department of Agriculture (USDA) prohibits discrimination against its customers, employees and applicants for employment on the bases of race, color, national origin, age, disability, sex, gender identity, religion, reprisal, and where applicable, political beliefs, marital status, familial or parental status, sexual orientation, or all or part of an individual's income is derived from any public assistance program, or protected genetic information in employment or in any program or activity conducted or funded by the Department. (Not all prohibited bases apply to all programs and/or employment activities.)

If you wish to file an employment complaint, you must contact your agency's EEO Counselor within 45 days of the date of the alleged discriminatory act, event, or in the case of a personnel action. Additional information can be found online at http://www.ascr.usda.gov/complaint_filing_file.html.

If you wish to file a Civil Rights program complaint of discrimination, complete the USDA Program Discrimination Complaint Form, found online at http://www.ascr.usda.gov/complaint_filing_cust.html, or at any USDA office, or call (866) 632-9992 to request the form. You may also write a letter containing all of the information requested in the form. Send your completed complaint form or letter to us by mail at U.S. Department of Agriculture, Director, Office of Adjudication, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9419, by fax at (202) 690-7442, or email at program.intake@usda.gov.

Individuals who are deaf, hard of hearing or have speech disabilities and you wish to file either an EEO or program complaint please contact USDA through the Federal Relay Service at (800) 877-8339 or (800) 845-6136 (in Spanish). Persons with disabilities, who wish to file a program complaint, please see information above on how to contact us by mail or by email. If you require alternative means of communication for program information (e.g., Braille, large print, audiotape, etc.), please contact USDA's TARGET Center at (202) 720-2600 (voice and TDD).

Governor's Drought & Water Supply Advisory Committee

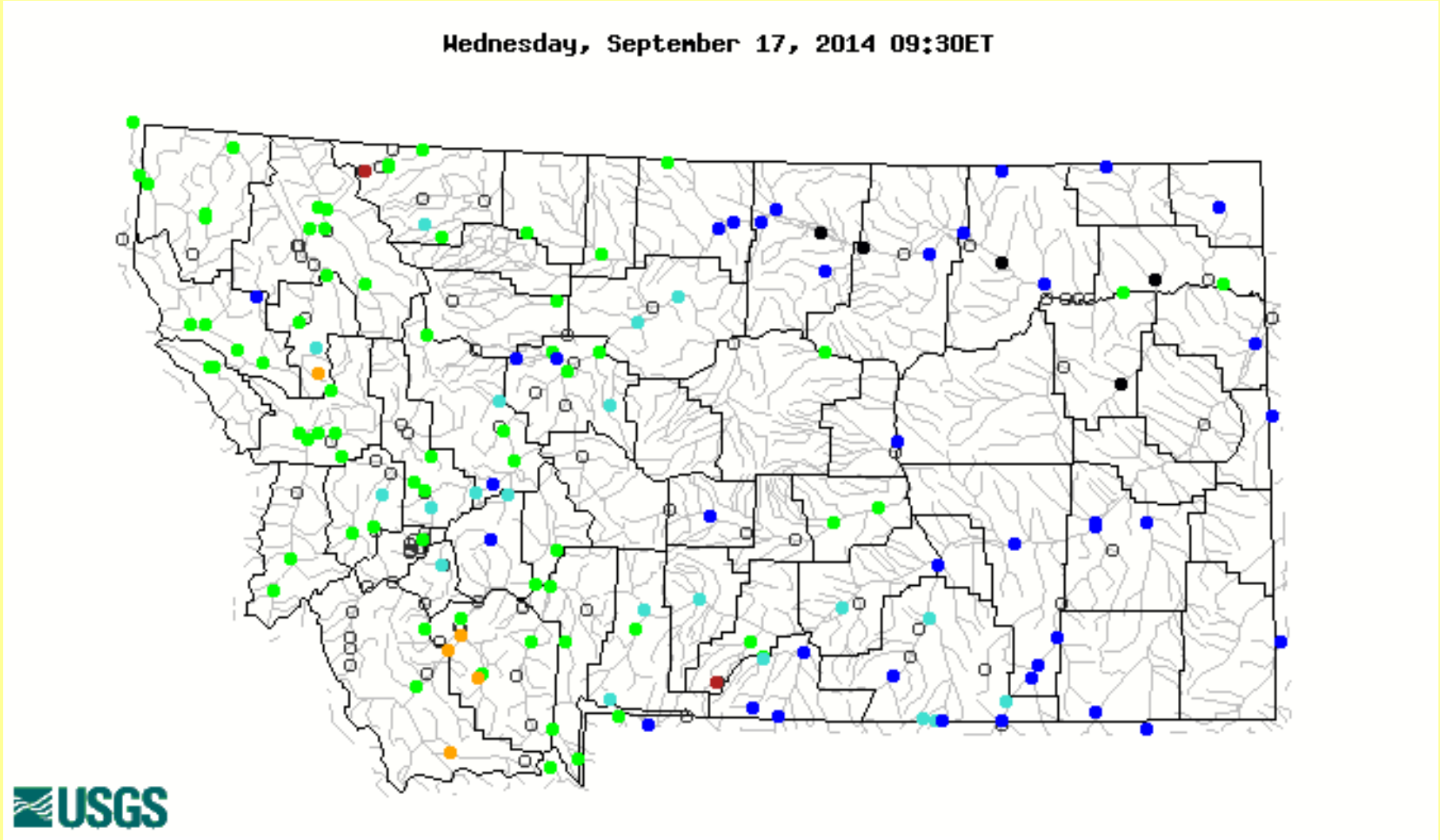
Snow Survey and Water Supply Report

September 18th, 2014

Lucas Zukiewicz
Water Supply Specialist
USDA NRCS Montana Snow Surveys
Lucas.Zukiewicz@mt.usda.gov
(406) 587-6843
http://www.nrcs.usda.gov/wps/portal/nrcs/main/mt/snow/

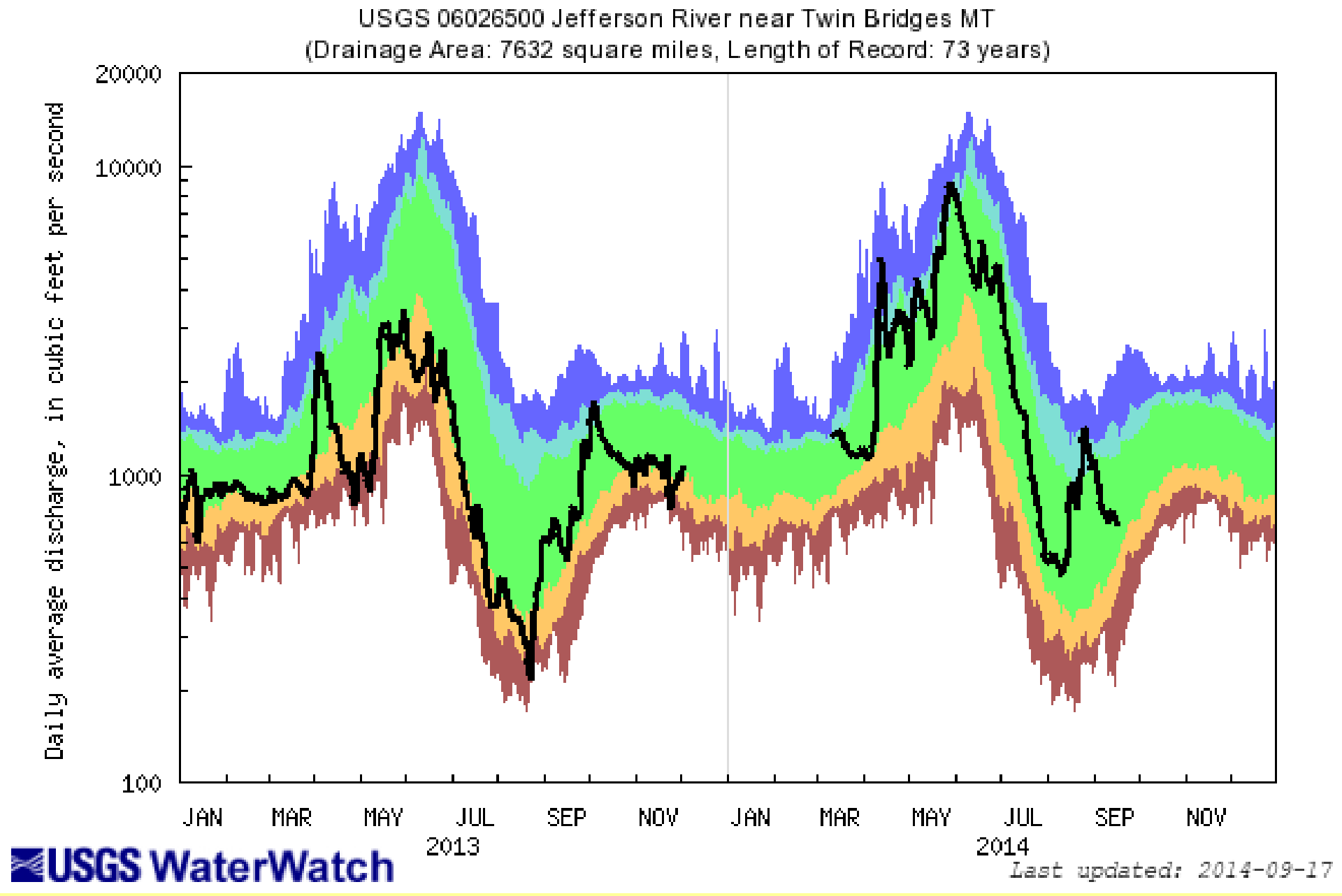
USGS Streamflows, September 2014

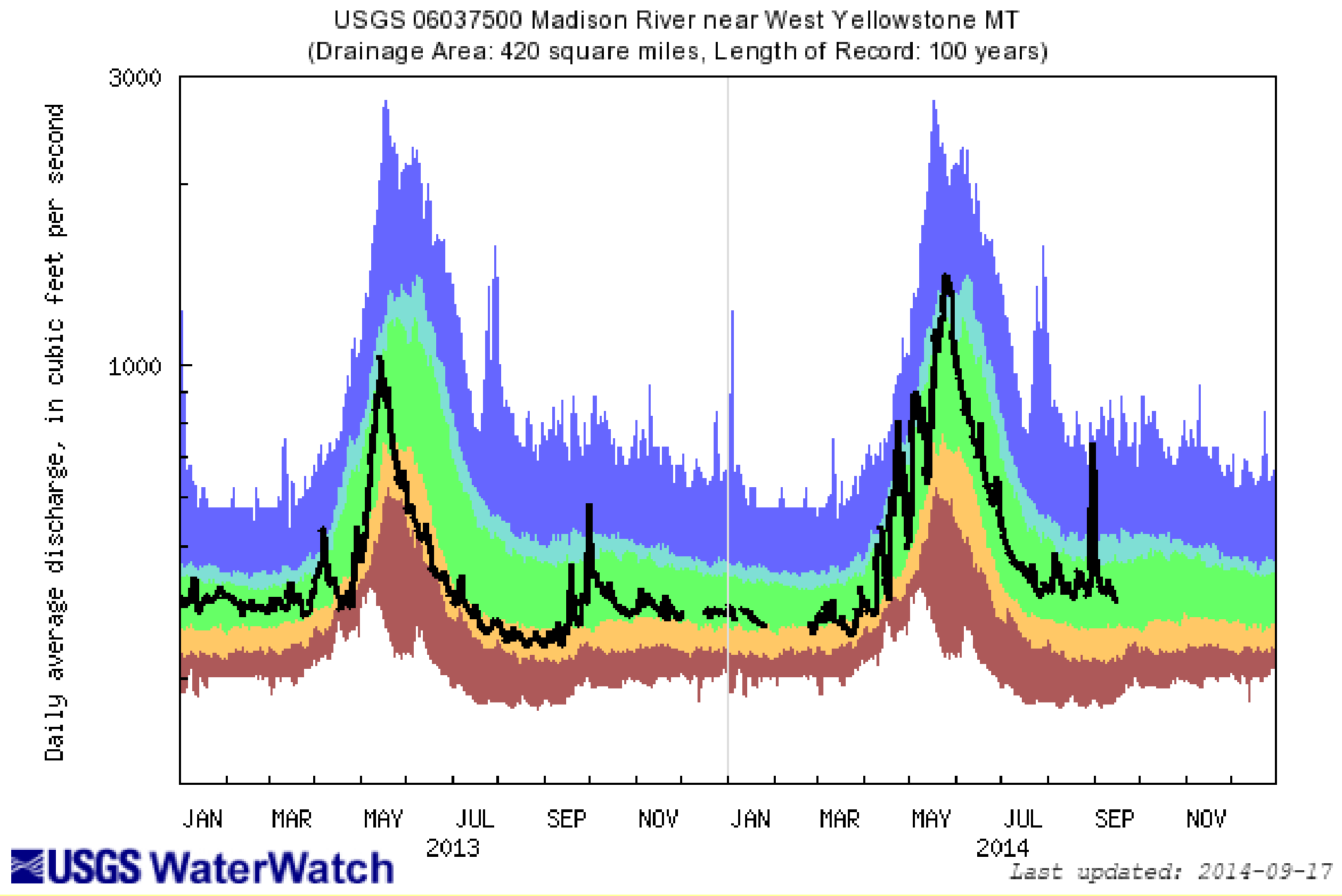
DAILY STREAMFLOW CONDITIONS

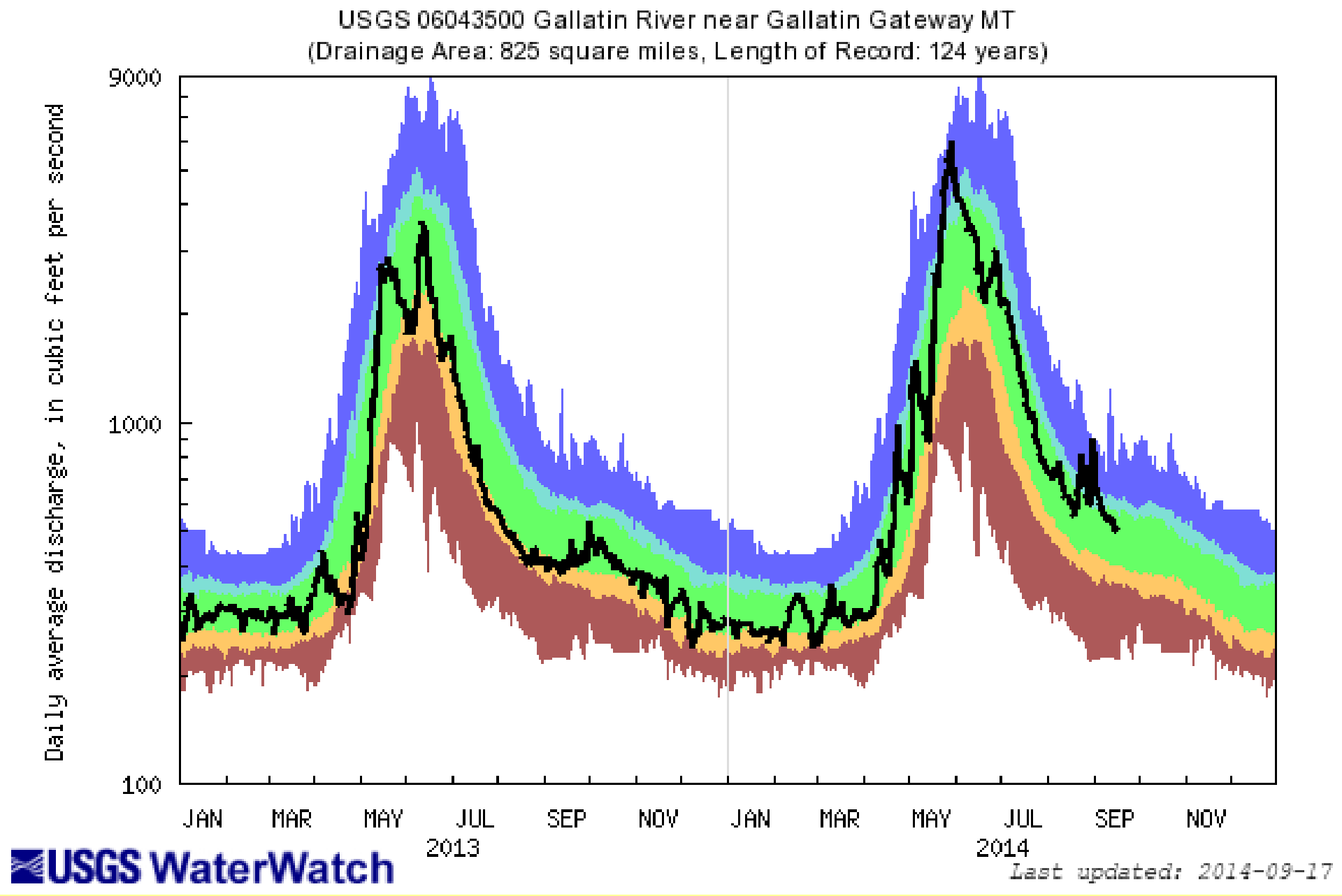


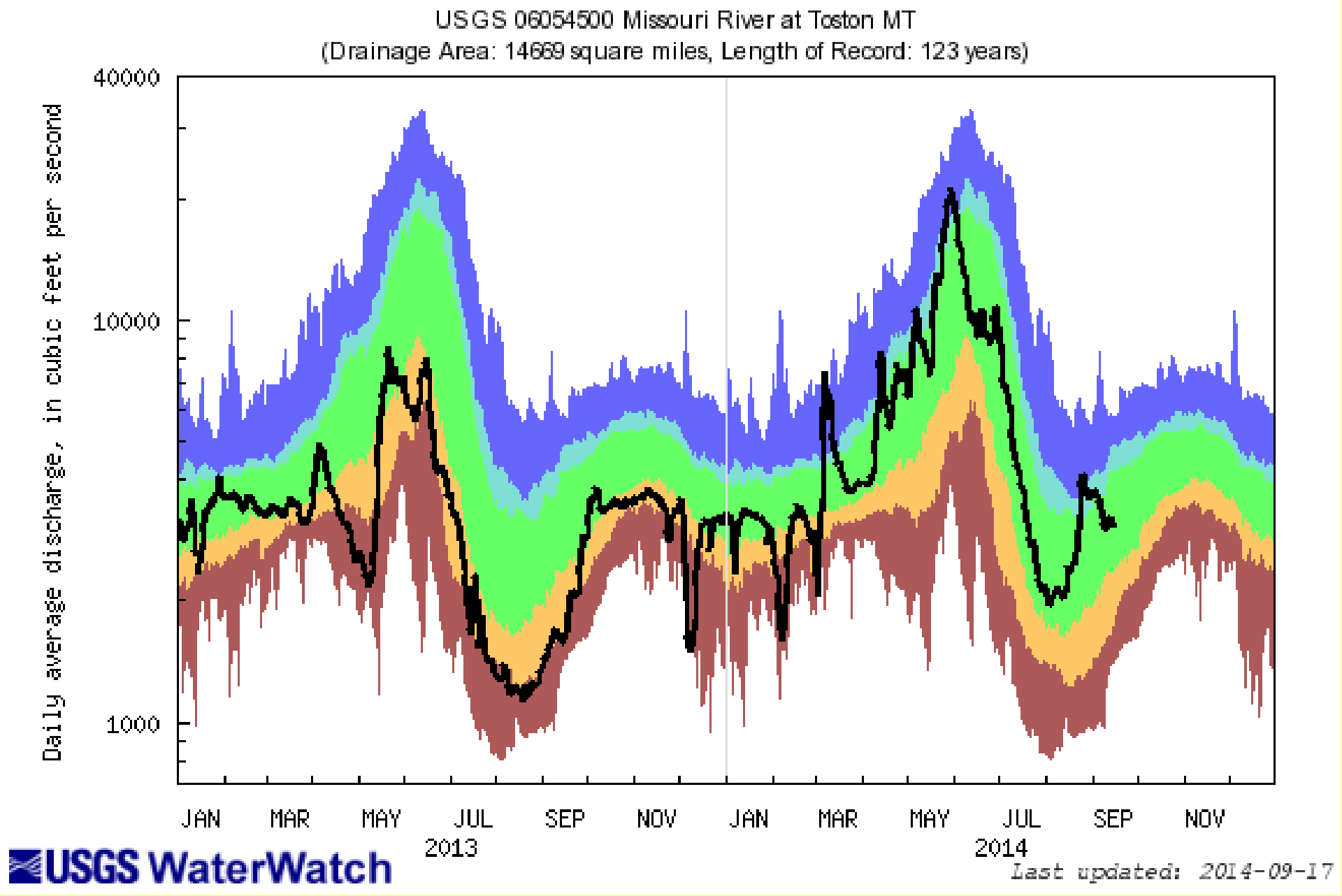
Record High Discharge for September 17

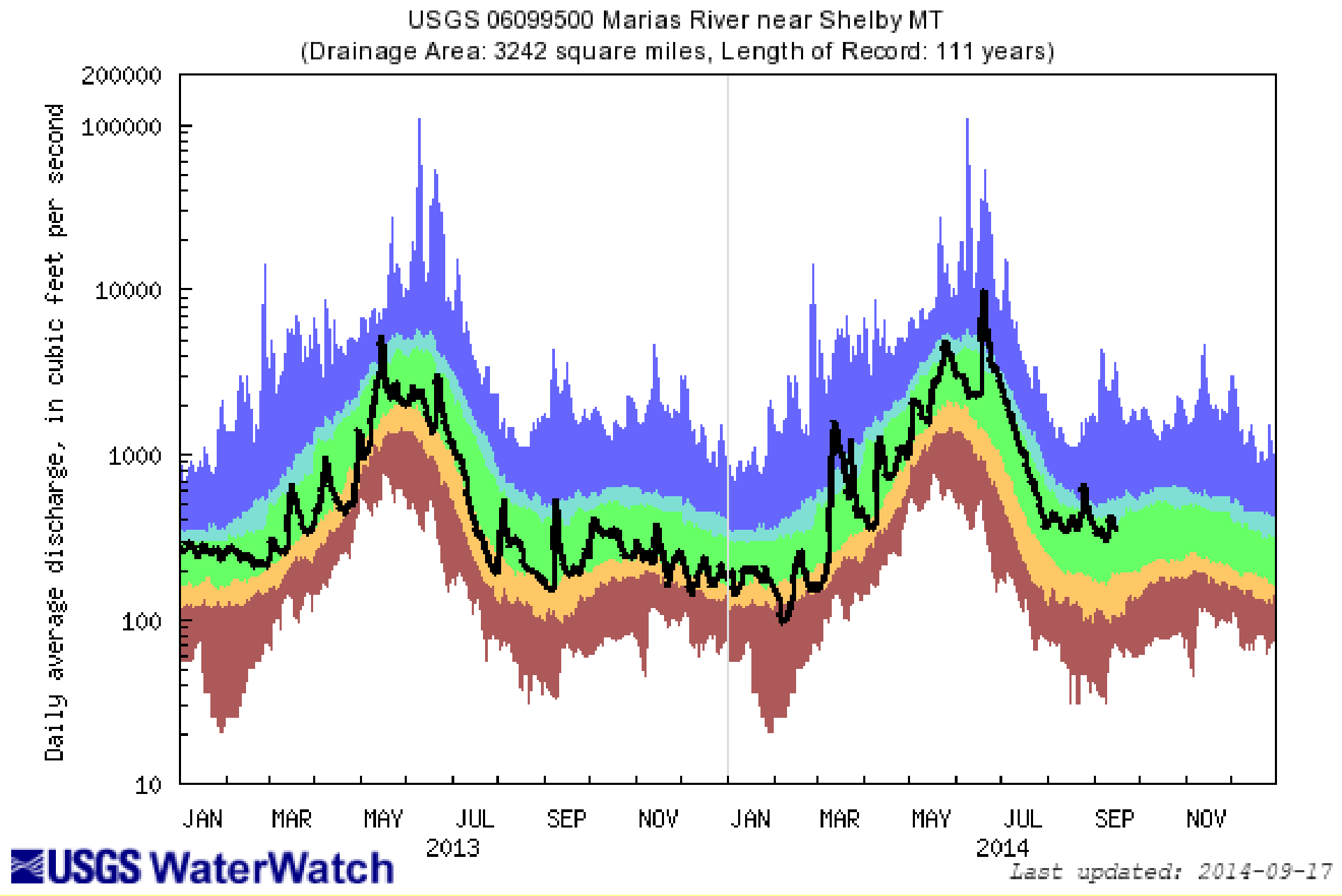
06154100 – Milk River near Harlem
06155030 – Milk River near Dodson
06172310 – Milk River at Tampico

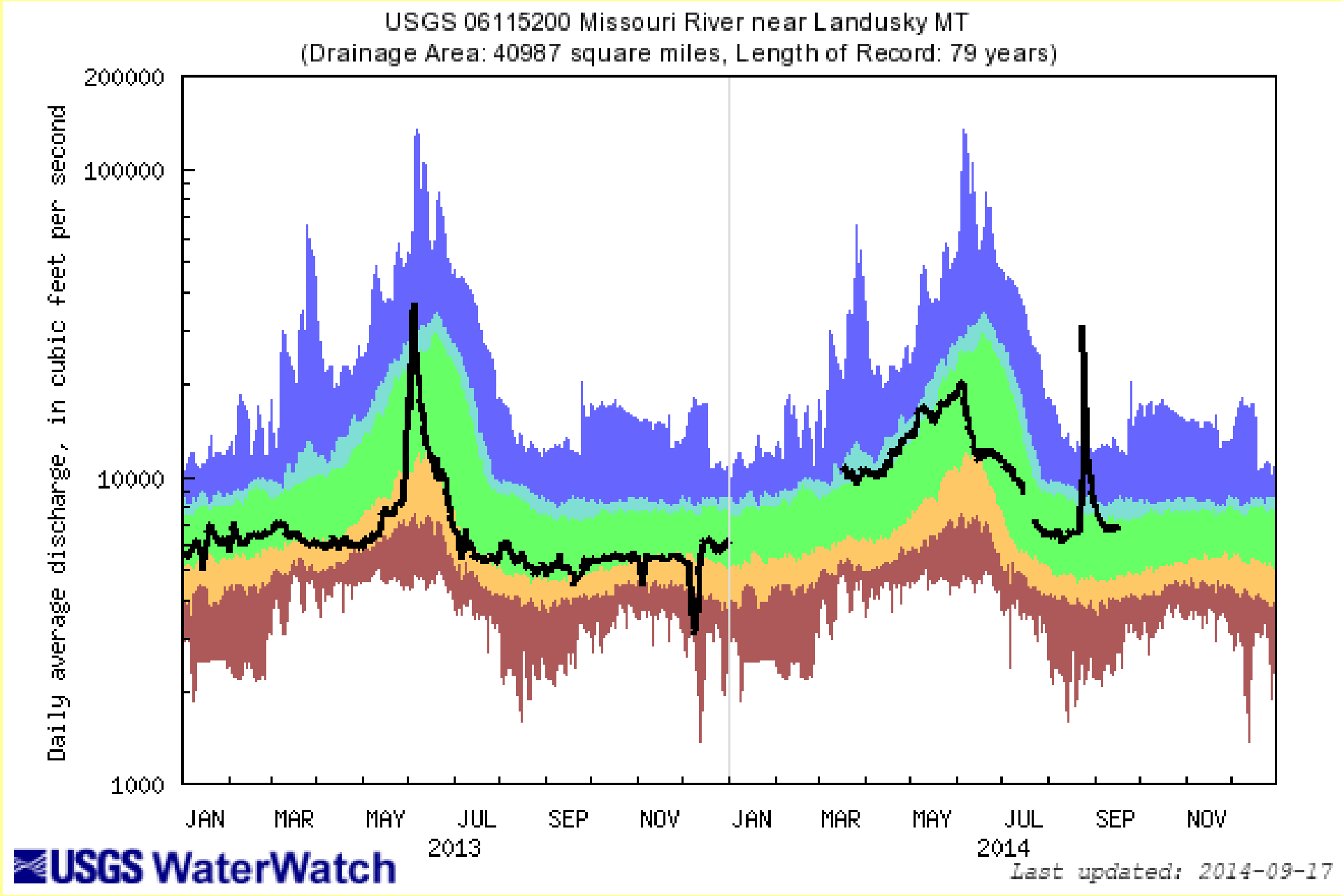

USGS 06026500 Jefferson River near Twin Bridges MT
(Drainage Area: 7632 square miles, Length of Record: 73 years)
Daily average discharge, in cubic feet per second
20000
10000
1000
100
JAN
MAR
MAY
JUL
SEP
NOV
2013
2014
USGS WaterWatch
Last updated: 2014-09-17
Explanation - Percentile classes
lowest-10th percentile
10-24
25-75
76-90
90th percentile -highest
Flow
Much below normal
Below normal
Normal
Above normal
Much above normal

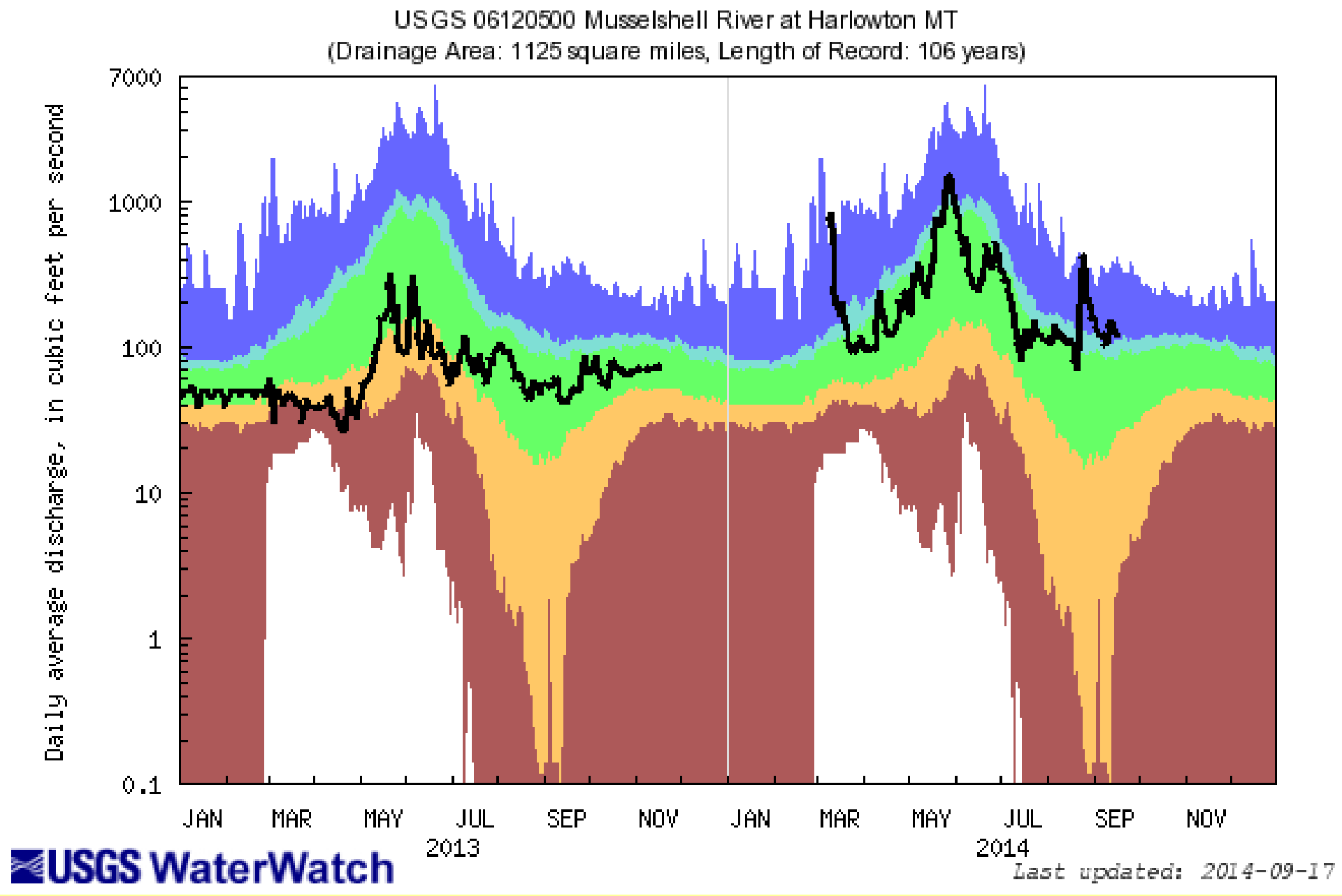

USGS 06037500 Madison River near West Yellowstone MT
(Drainage Area: 420 square miles, Length of Record: 100 years)
Daily average discharge, in cubic feet per second
3000
1000
JAN
MAR
MAY
JUL
SEP
NOV
2013
2014
USGS WaterWatch
Last updated: 2014-09-17
Explanation - Percentile classes
lowest-10th percentile
10-24
25-75
76-90
90th percentile -highest
Flow
Much below normal
Below normal
Normal
Above normal
Much above normal

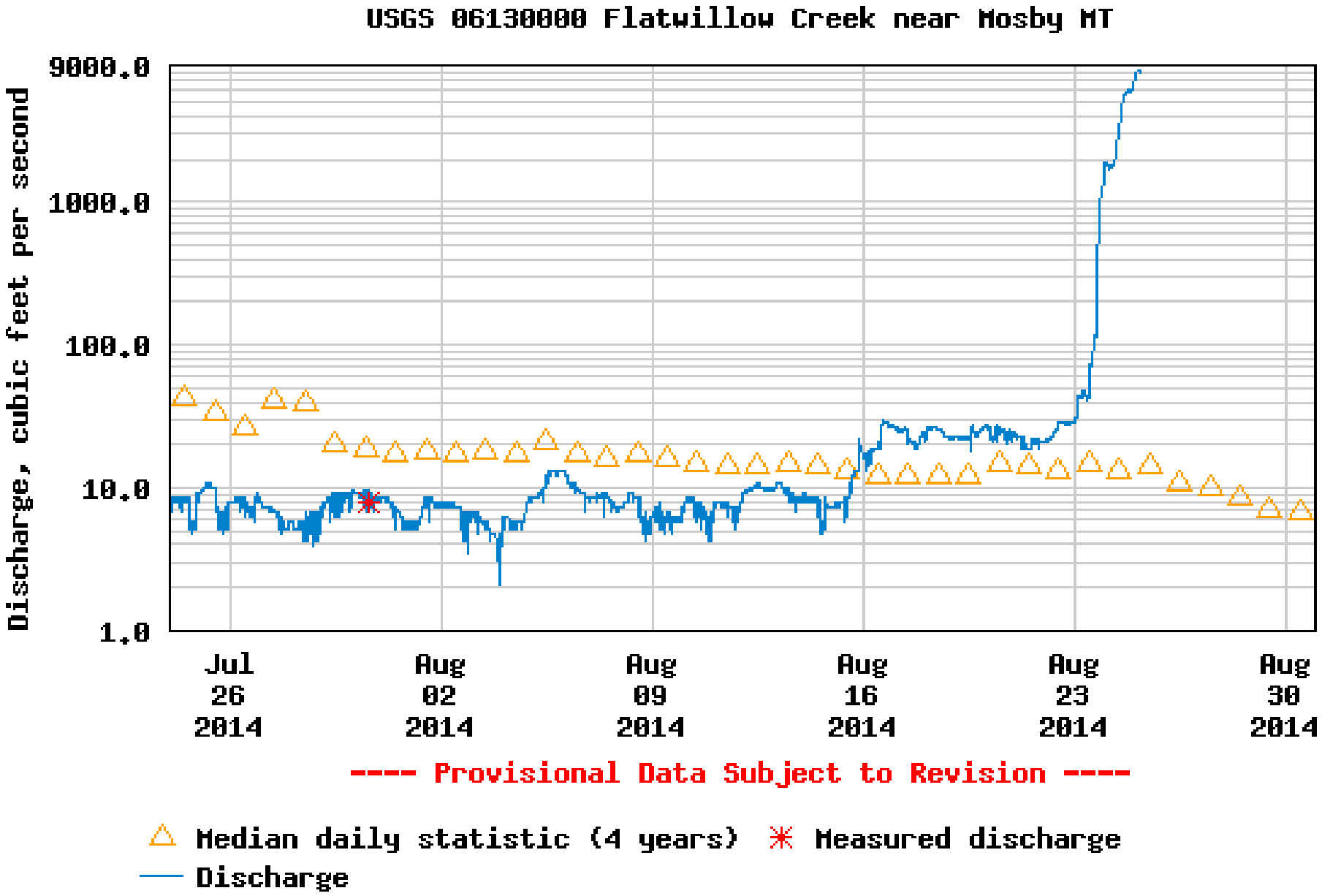

USGS 06043500 Gallatin River near Gallatin Gateway MT
(Drainage Area: 825 square miles, Length of Record: 124 years)
Daily average discharge, in cubic feet per second
9000
1000
100
JAN
MAR
MAY
JUL
SEP
NOV
2013
2014
USGS WaterWatch
Last updated: 2014-09-17
Explanation - Percentile classes
lowest-10th percentile
10-24
25-75
76-90
90th percentile -highest
Flow
Much below normal
Below normal
Normal
Above normal
Much above normal


USGS 06054500 Missouri River at Toston MT
(Drainage Area: 14669 square miles, Length of Record: 123 years)
Daily average discharge, in cubic feet per second
40000
10000
1000
JAN
MAR
MAY
JUL
SEP
NOV
JAN
MAR
MAY
JUL
SEP
NOV
2013
2014
USGS WaterWatch
Last updated: 2014-09-17
Explanation - Percentile classes
lowest-10th percentile
10-24
25-75
76-90
90th percentile -highest
Flow
Much below normal
Below normal
Normal
Above normal
Much above normal


USGS 06099500 Marias River near Shelby MT
(Drainage Area: 3242 square miles, Length of Record: 111 years)
Daily average discharge, in cubic feet per second
200000
100000
10000
1000
100
10
JAN
MAR
MAY
JUL
SEP
NOV
2013
2014
USGS WaterWatch
Last updated: 2014-09-17
Explanation - Percentile classes
lowest-10th percentile
10-24
25-75
76-90
90th percentile -highest
Flow
Much below normal
Below normal
Normal
Above normal
Much above normal


USGS 06115200 Missouri River near Landusky MT
(Drainage Area: 40987 square miles, Length of Record: 79 years)
Daily average discharge, in cubic feet per second
200000
100000
10000
1000
JAN
MAR
MAY
JUL
SEP
NOV
2013
2014
USGS WaterWatch
Last updated: 2014-09-17
Explanation - Percentile classes
lowest-10th percentile
10-24
25-75
76-90
90th percentile -highest
Flow
Much below normal
Below normal
Normal
Above normal
Much above normal

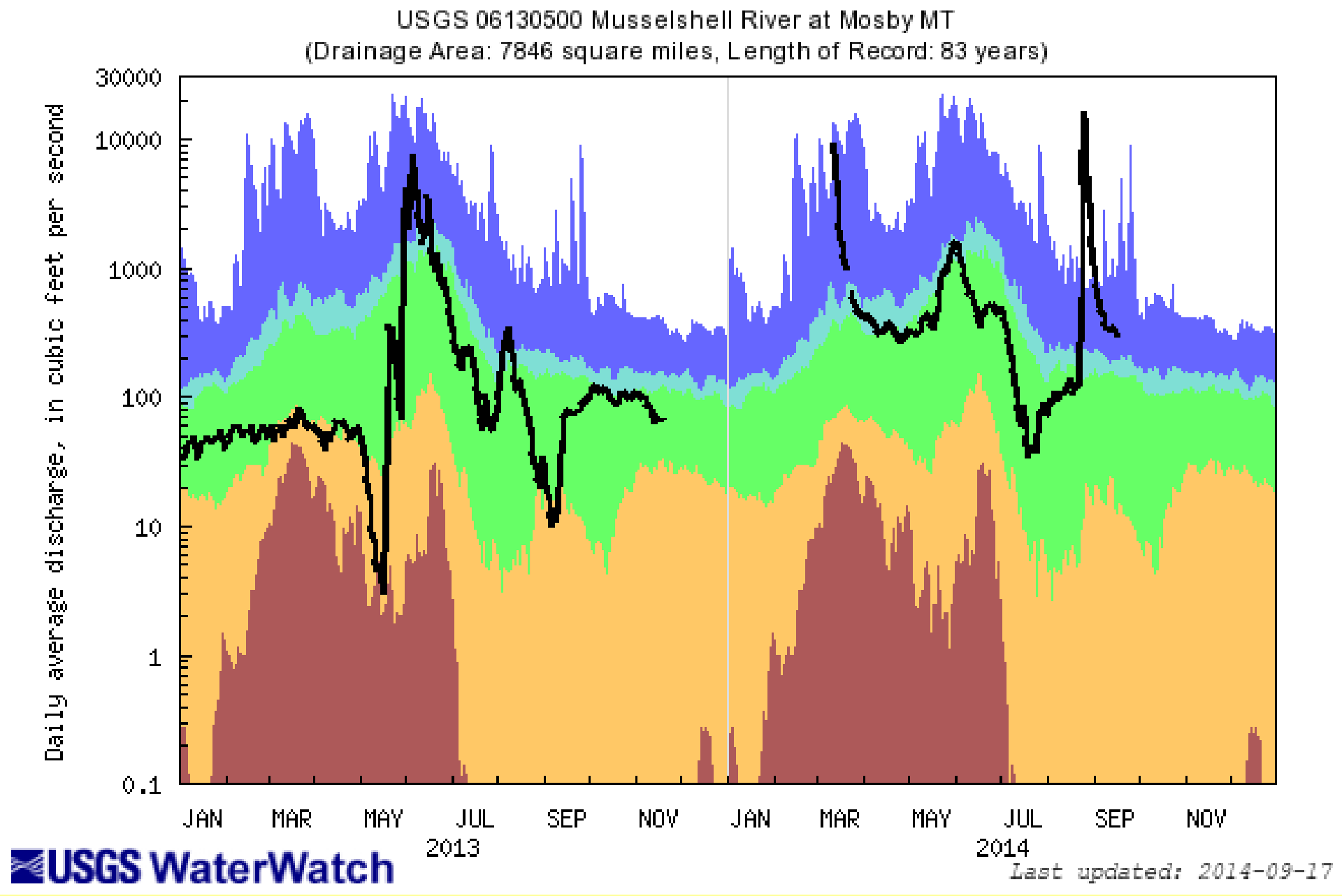

USGS 06120500 Musselshell River at Harlowton MT
(Drainage Area: 1125 square miles, Length of Record: 106 years)
Daily average discharge, in cubic feet per second
7000
1000
100
10
1
0.1
JAN
MAR
MAY
JUL
SEP
NOV
2013
2014
USGS WaterWatch
Last updated: 2014-09-17
Explanation - Percentile classes
lowest-10th percentile
10-24
25-75
76-90
90th percentile -highest
Flow
Much below normal
Below normal
Normal
Above normal
Much above normal

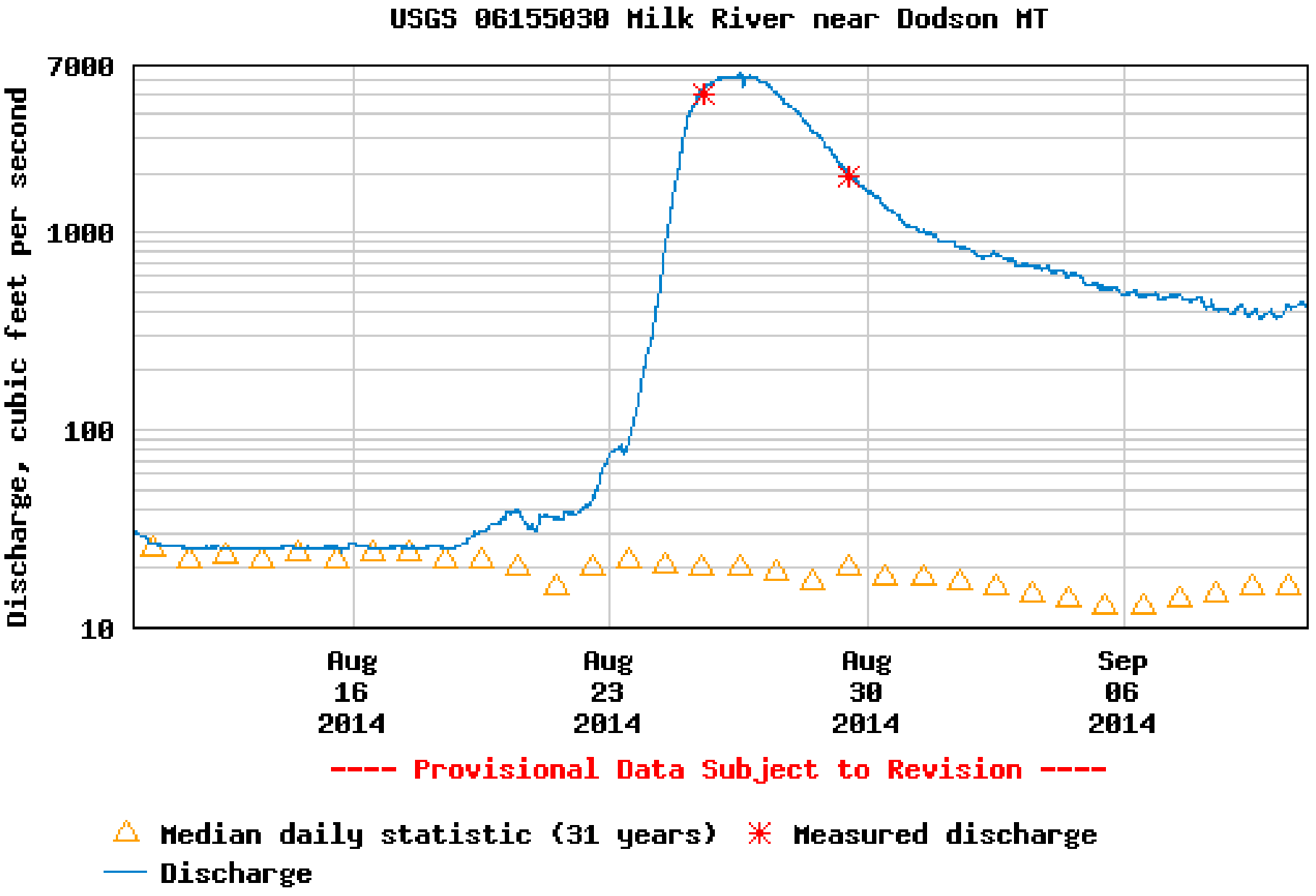

USGS 06130000 Flatwillow Creek near Mosby MT
Discharge, cubic feet per second
9000.0
1000.0
100.0
10.0
1.0
Jul 26 2014
Aug 02 2014
Aug 09 2014
Aug 16 2014
Aug 23 2014
Aug 30 2014
---- Provisional Data Subject to Revision ----
Median daily statistic (4 years)
Measured discharge
Discharge

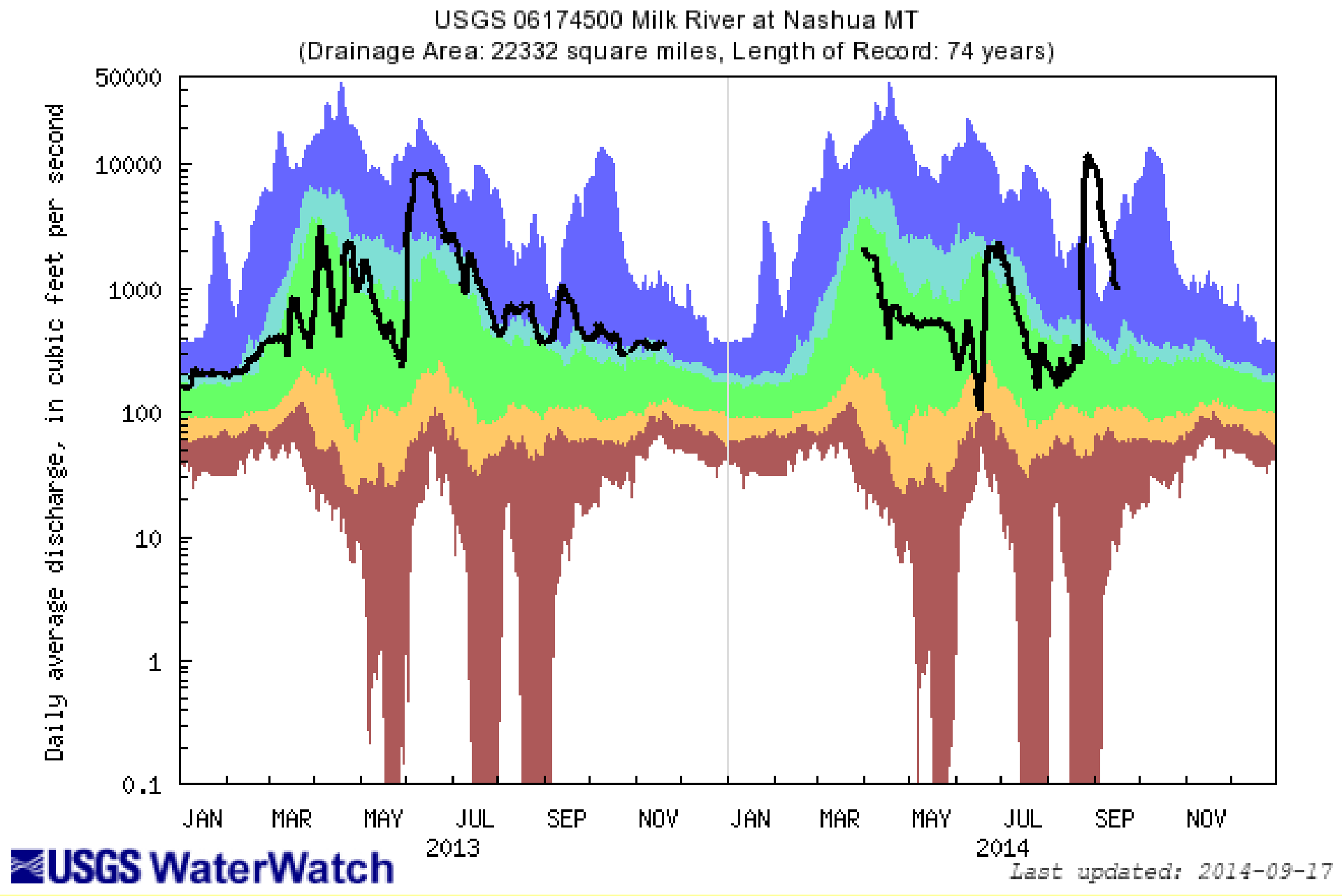

August 25, 2014

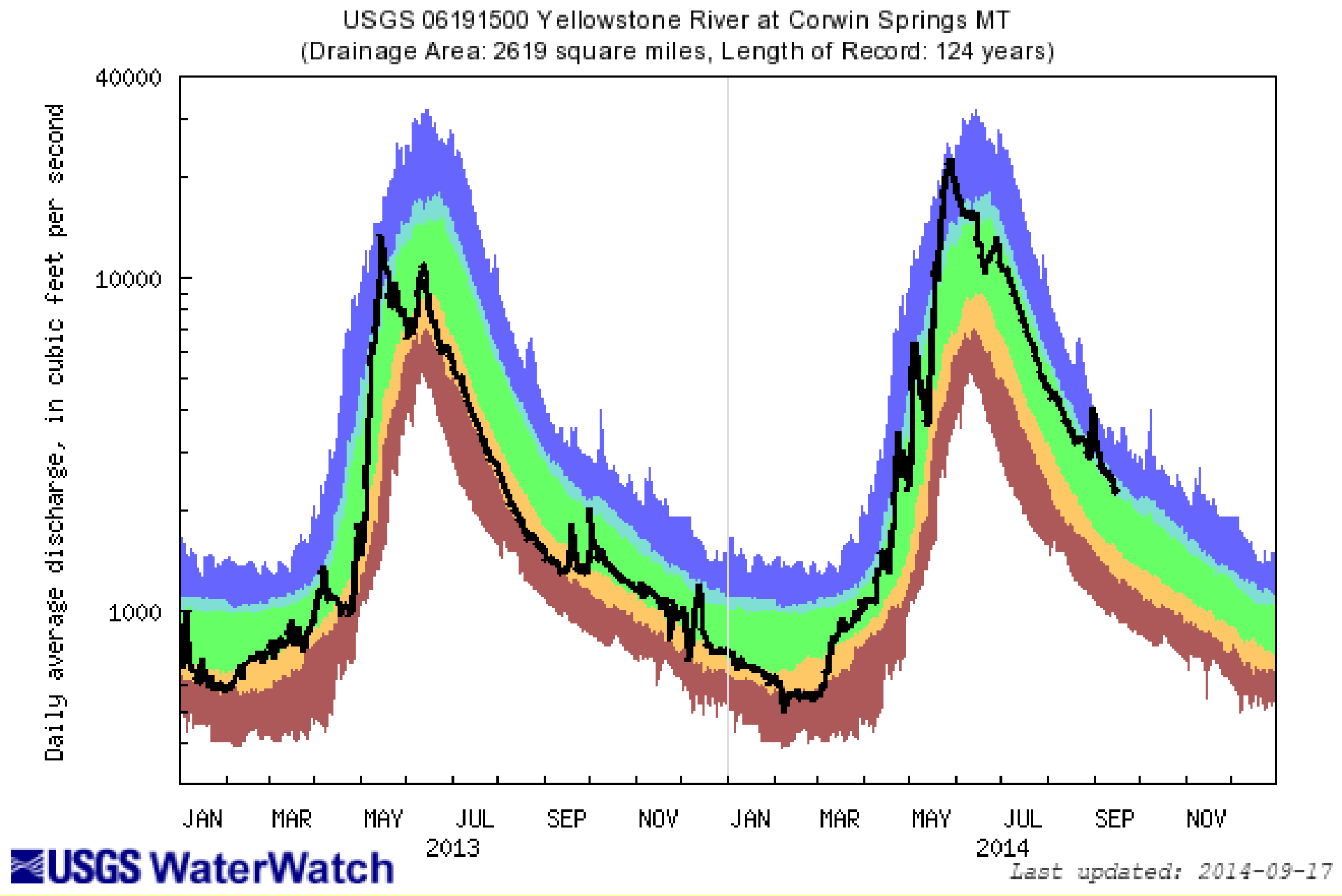

August 26, 2014

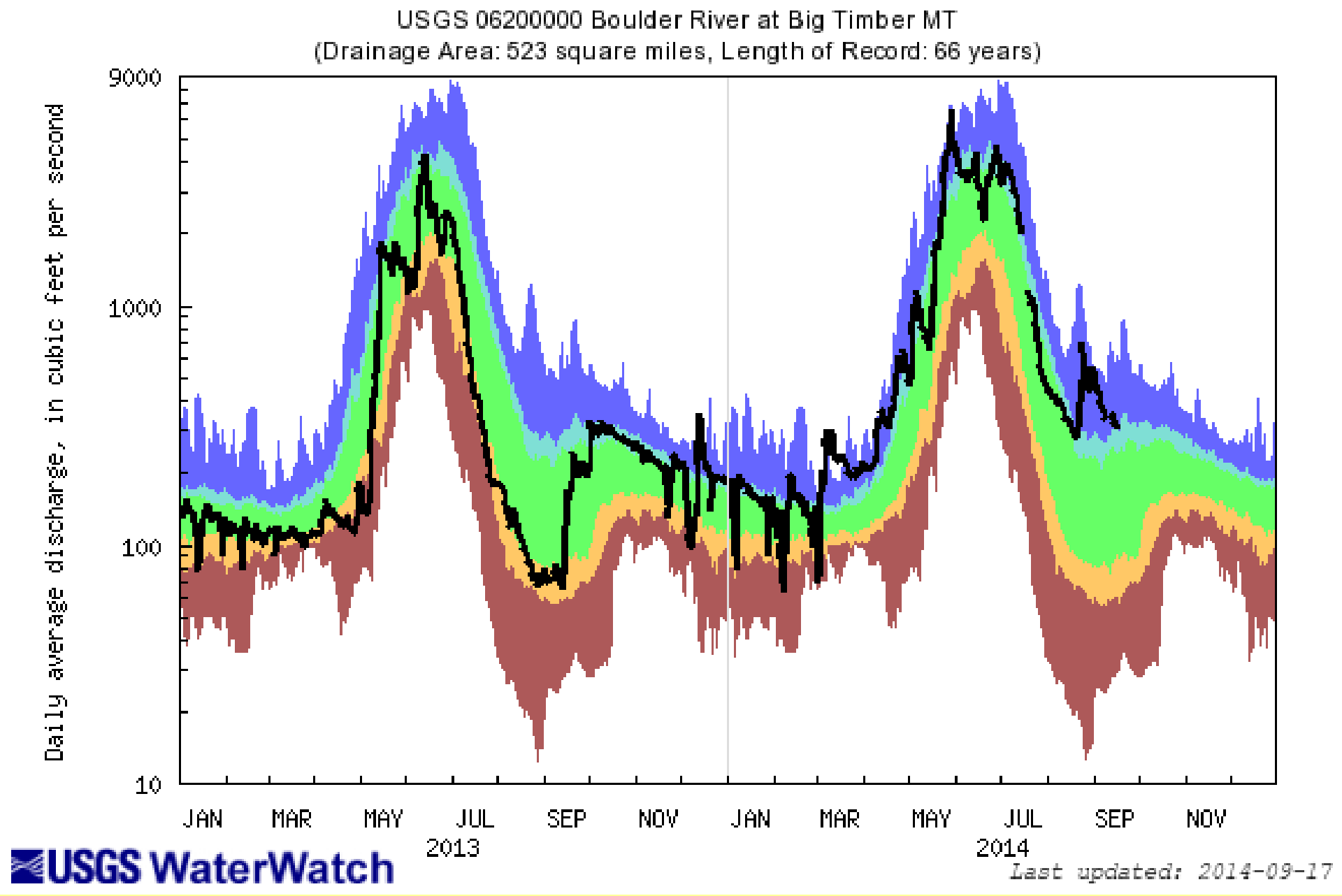

cfboyer.com
kestrelaerial.com

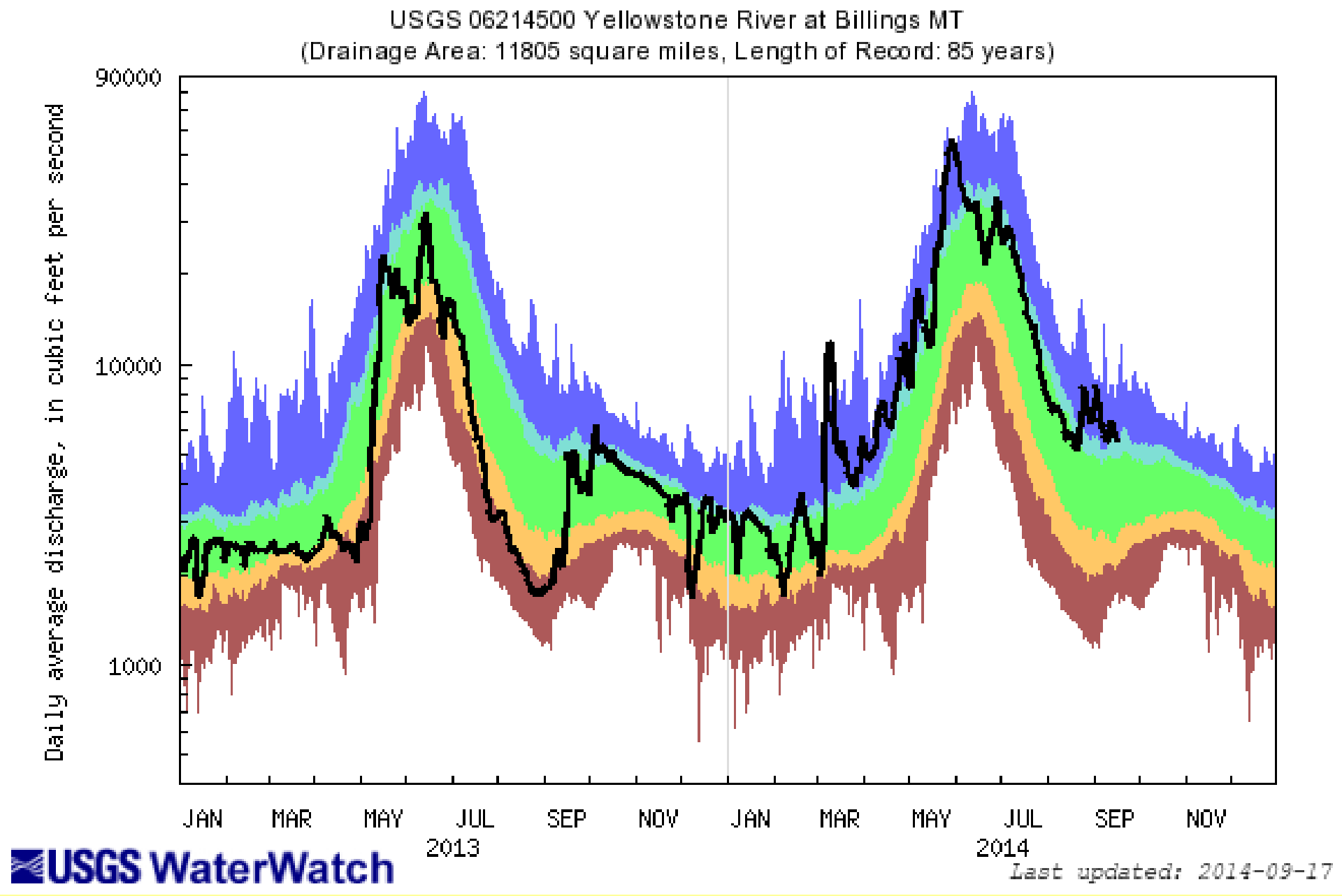

USGS 06130500 Musselshell River at Mosby MT
(Drainage Area: 7846 square miles, Length of Record: 83 years)
Daily average discharge, in cubic feet per second
30000
10000
1000
100
10
1
0.1
JAN
MAR
MAY
JUL
SEP
NOV
2013
2014
USGS WaterWatch
Last updated: 2014-09-17
Explanation - Percentile classes
lowest-10th percentile
10-24
25-75
76-90
90th percentile -highest
Flow
Much below normal
Below normal
Normal
Above normal
Much above normal

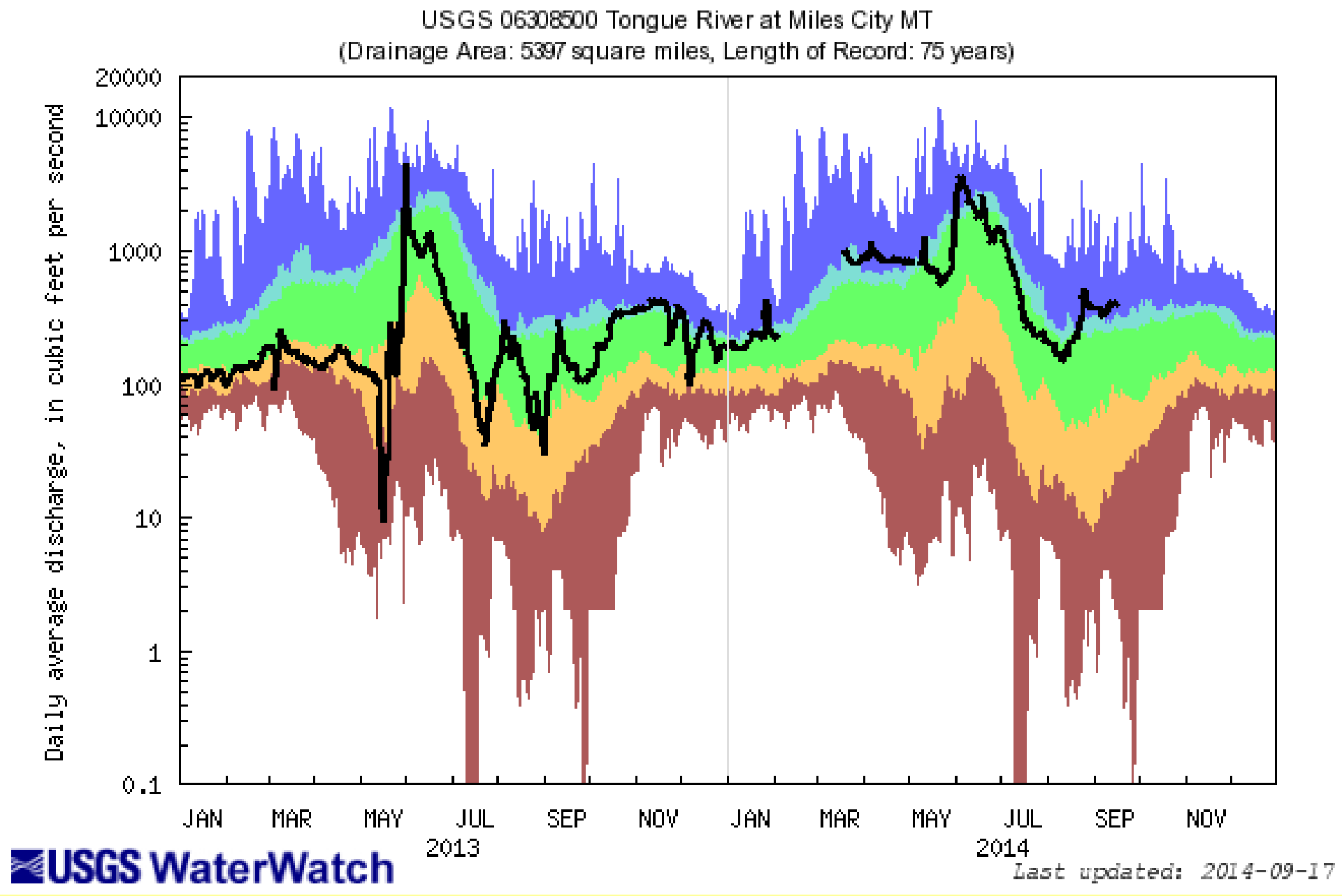

USGS 06155030 Milk River near Dodson MT
Discharge, cubic feet per second
7000
1000
100
10
Aug 16 2014
Aug 23 2014
Aug 30 2014
Sep 06 2014
---- Provisional Data Subject to Revision ----
Median daily statistic (31 years)
Measured discharge
Discharge

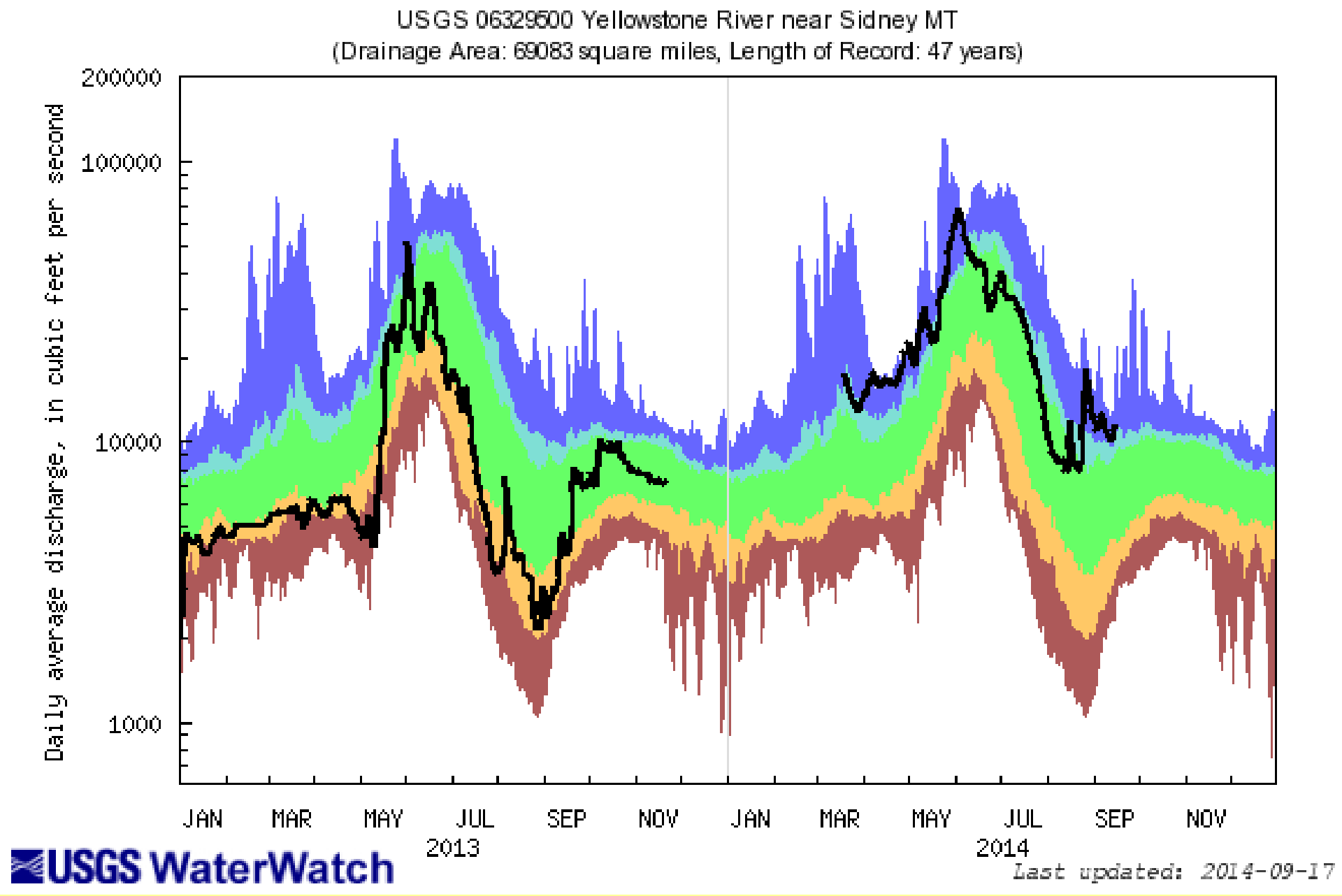

USGS 06174500 Milk River at Nashua MT
(Drainage Area: 22332 square miles, Length of Record: 74 years)
Daily average discharge, in cubic feet per second
50000
10000
1000
100
10
1
0.1
JAN
MAR
MAY
JUL
SEP
NOV
2013
2014
USGS WaterWatch
Last updated: 2014-09-17
Explanation - Percentile classes
lowest-10th percentile
10-24
25-75
76-90
90th percentile -highest
Flow
Much below normal
Below normal
Normal
Above normal
Much above normal

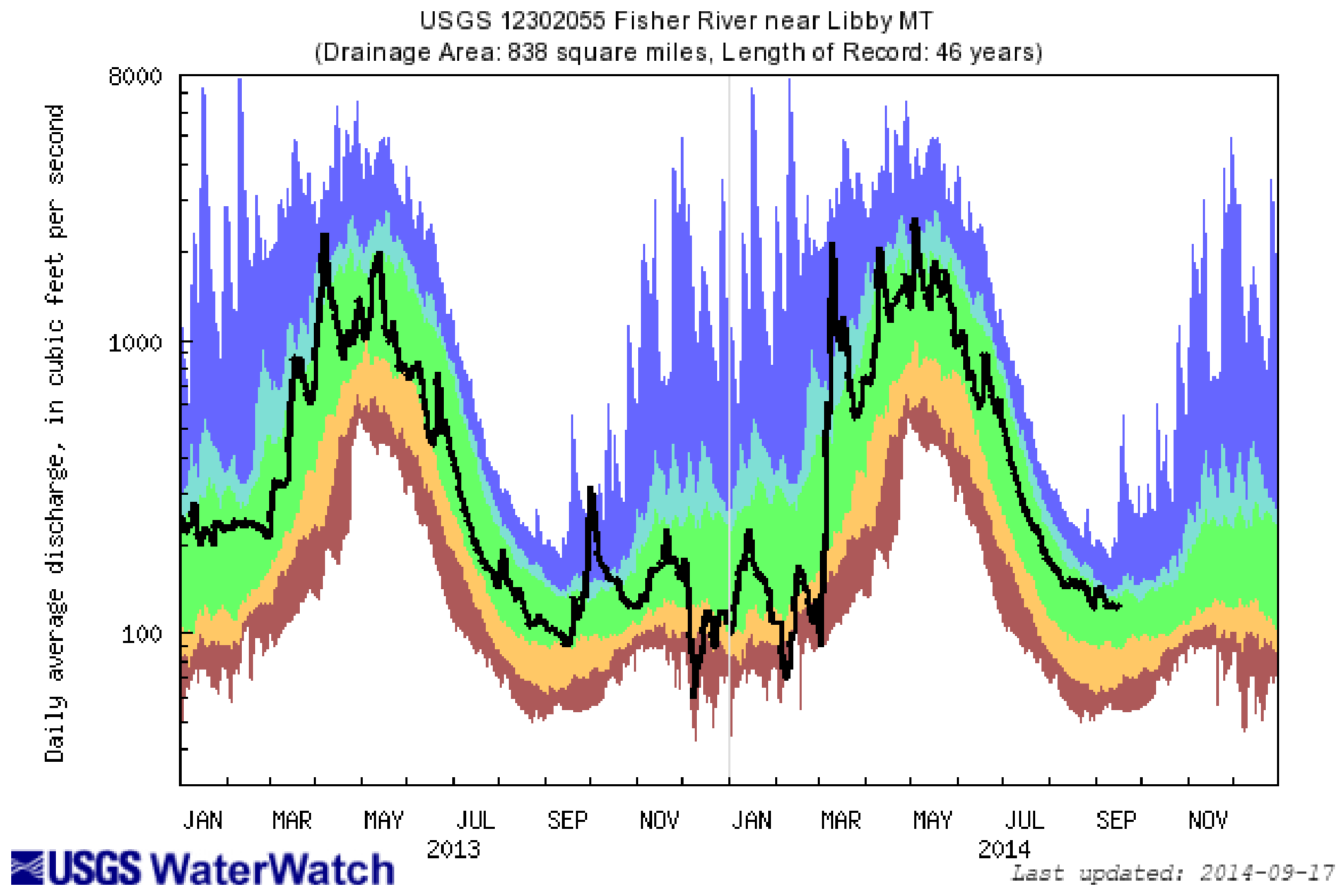

USGS 06191500 Yellowstone River at Corwin Springs MT
(Drainage Area: 2619 square miles, Length of Record: 124 years)
Daily average discharge, in cubic feet per second
40000
10000
1000
JAN
MAR
MAY
JUL
SEP
NOV
2013
2014
USGS WaterWatch
Last updated: 2014-09-17
Explanation - Percentile classes
lowest-10th percentile
10-24
25-75
76-90
90th percentile -highest
Flow
Much below normal
Below normal
Normal
Above normal
Much above normal

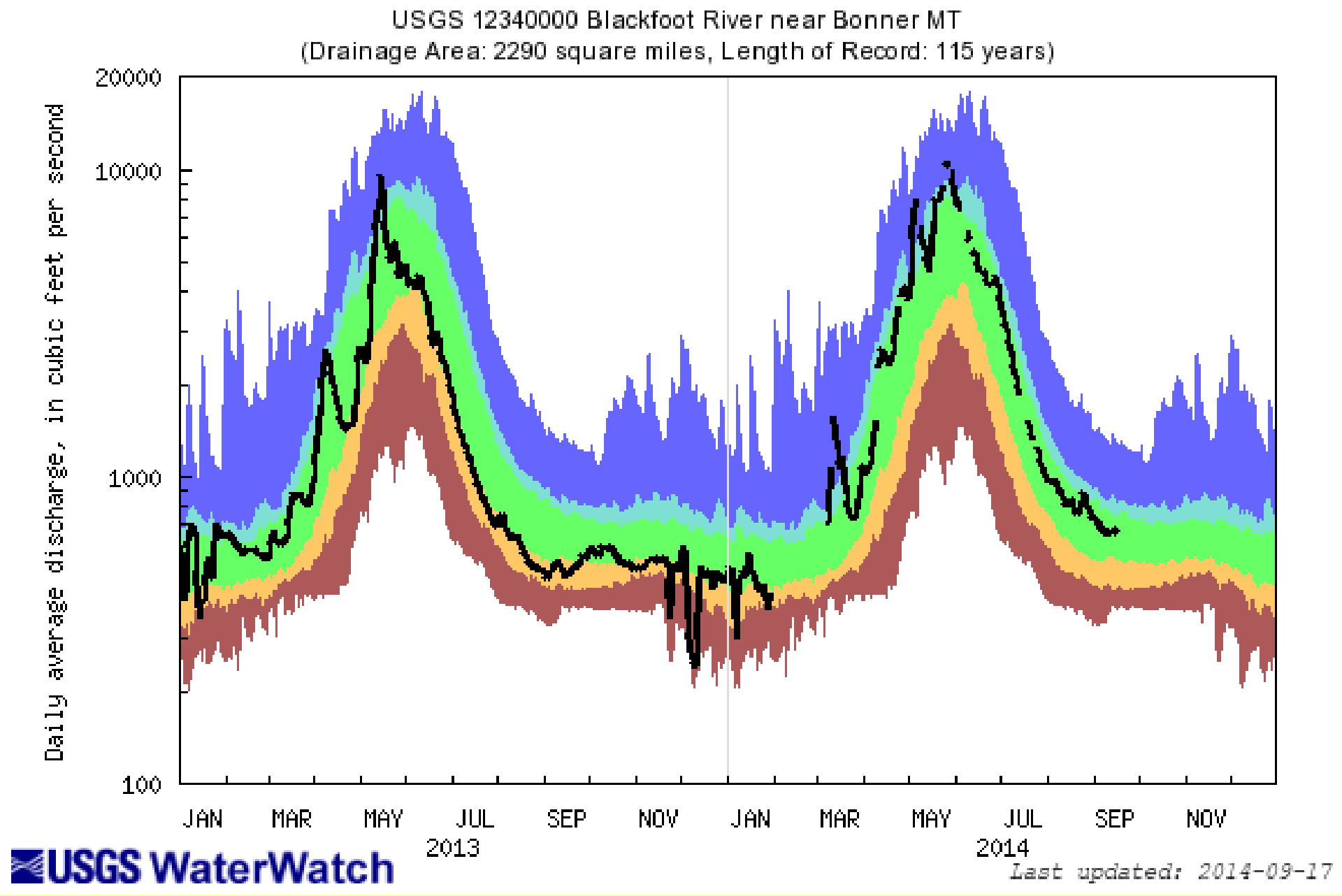

USGS 06200000 Boulder River at Big Timber MT
(Drainage Area: 523 square miles, Length of Record: 66 years)
Daily average discharge, in cubic feet per second
9000
1000
100
10
JAN
MAR
MAY
JUL
SEP
NOV
2013
2014
USGS WaterWatch
Last updated: 2014-09-17
Explanation - Percentile classes
lowest-10th percentile
10-24
25-75
76-90
90th percentile -highest
Flow
Much below normal
Below normal
Normal
Above normal
Much above normal

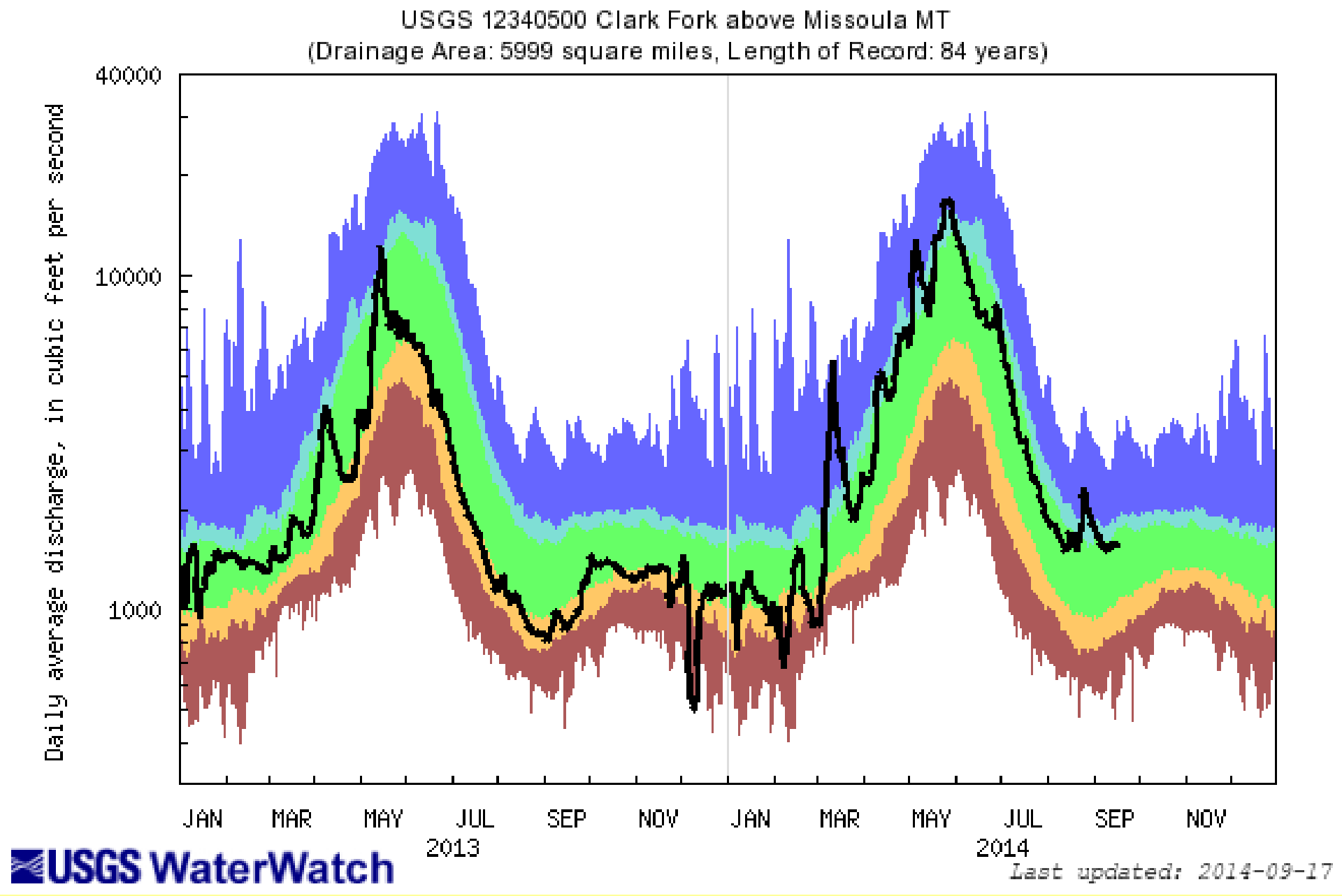

USGS 06214500 Yellowstone River at Billings MT
(Drainage Area: 11805 square miles, Length of Record: 85 years)
Daily average discharge, in cubic feet per second
90000
10000
1000
JAN
MAR
MAY
JUL
SEP
NOV
2013
2014
USGS WaterWatch
Last updated: 2014-09-17
Explanation - Percentile classes
lowest-10th percentile
10-24
25-75
76-90
90th percentile -highest
Flow
Much below normal
Below normal
Normal
Above normal
Much above normal

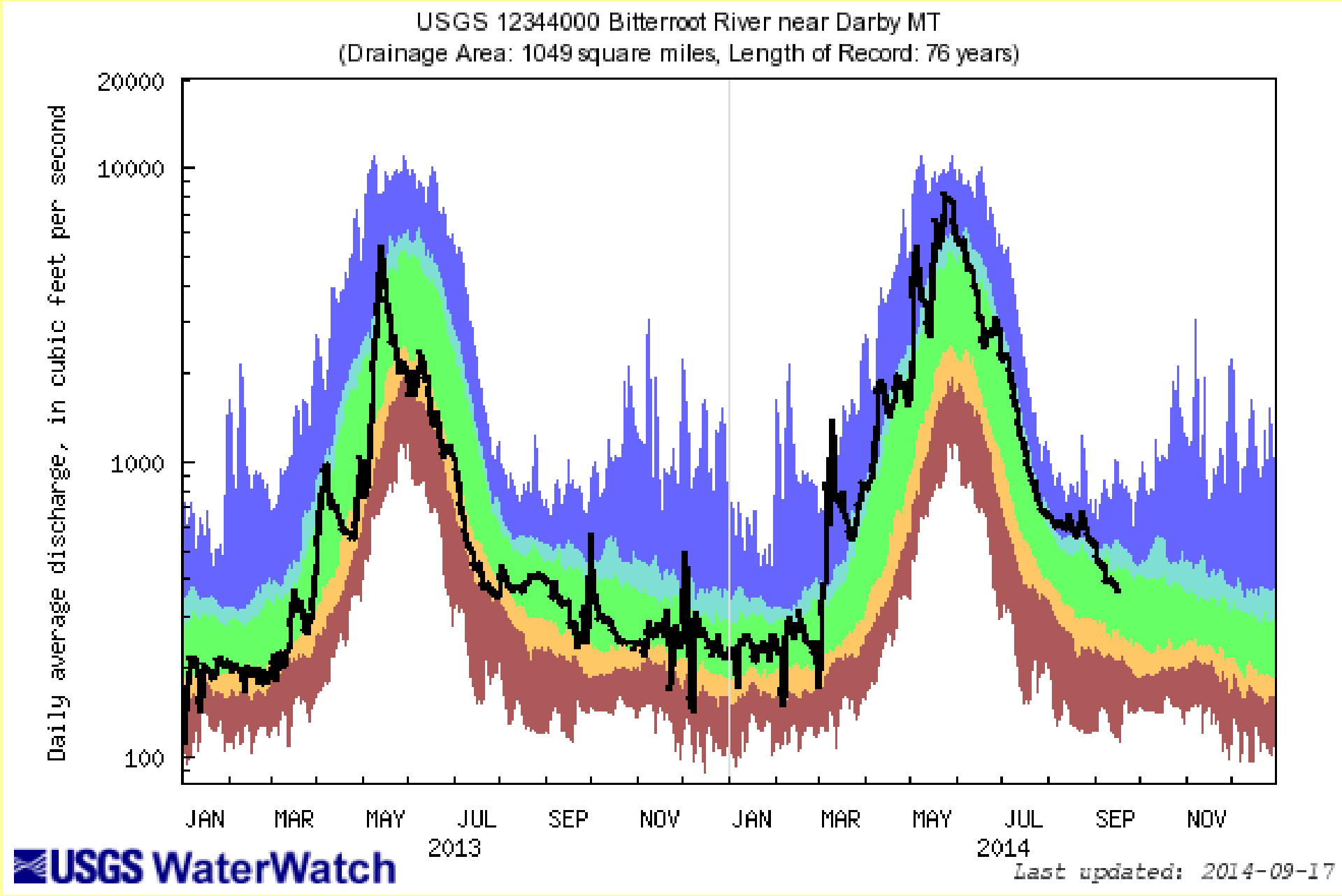

USGS 06308500 Tongue River at Miles City MT
(Drainage Area: 5397 square miles, Length of Record: 75 years)
Daily average discharge, in cubic feet per second
20000
10000
1000
100
10
1
0.1
JAN
MAR
MAY
JUL
SEP
NOV
2013
2014
USGS WaterWatch
Last updated: 2014-09-17
Explanation - Percentile classes
lowest-10th percentile
10-24
25-75
76-90
90th percentile -highest
Flow
Much below normal
Below normal
Normal
Above normal
Much above normal

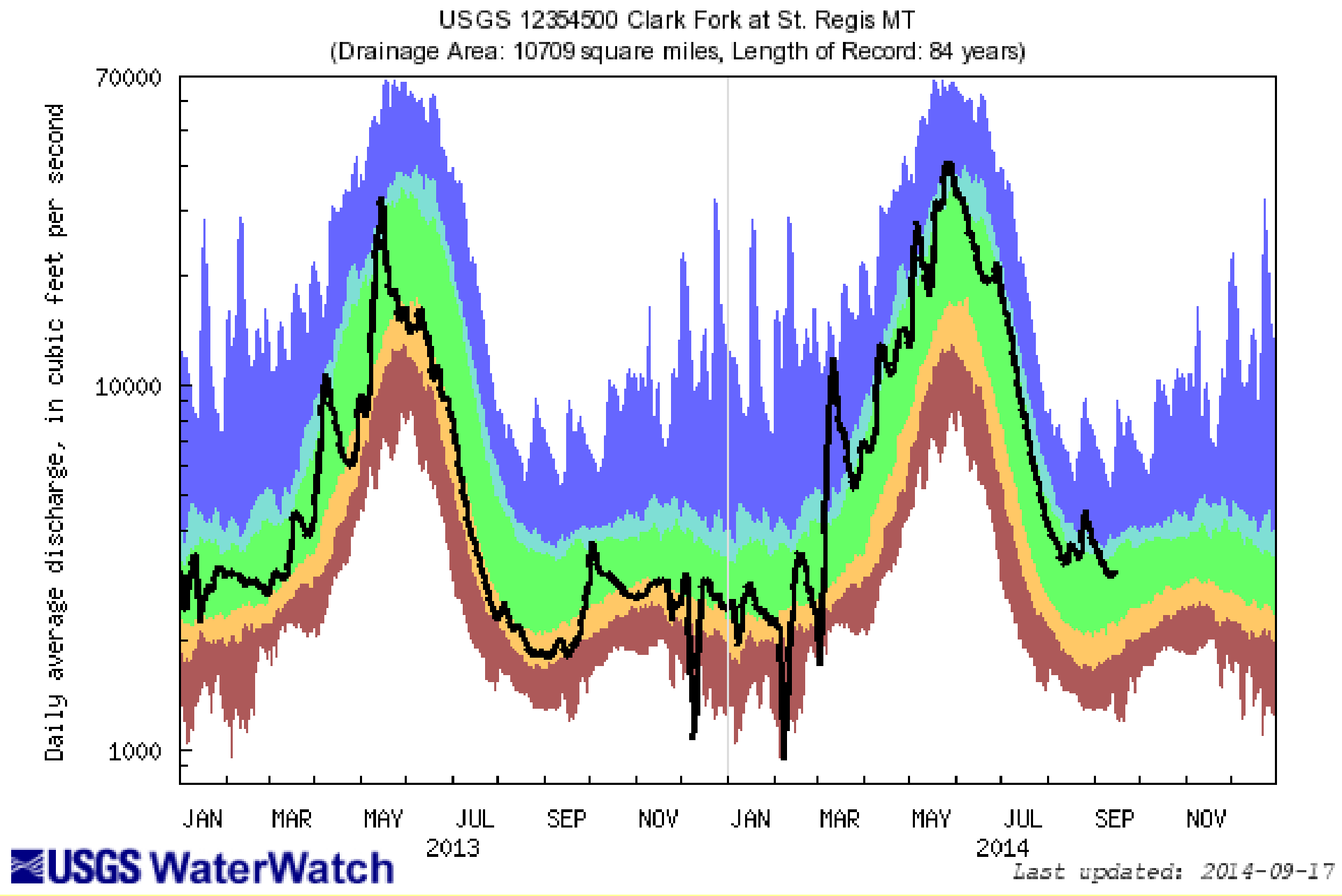

USGS 06329500 Yellowstone River near Sidney MT
(Drainage Area: 69083 square miles, Length of Record: 47 years)
Daily average discharge, in cubic feet per second
200000
100000
10000
1000
JAN
MAR
MAY
JUL
SEP
NOV
2013
2014
USGS WaterWatch
Last updated: 2014-09-17
Explanation - Percentile classes
lowest-10th percentile
10-24
25-75
76-90
90th percentile -highest
Flow
Much below normal
Below normal
Normal
Above normal
Much above normal

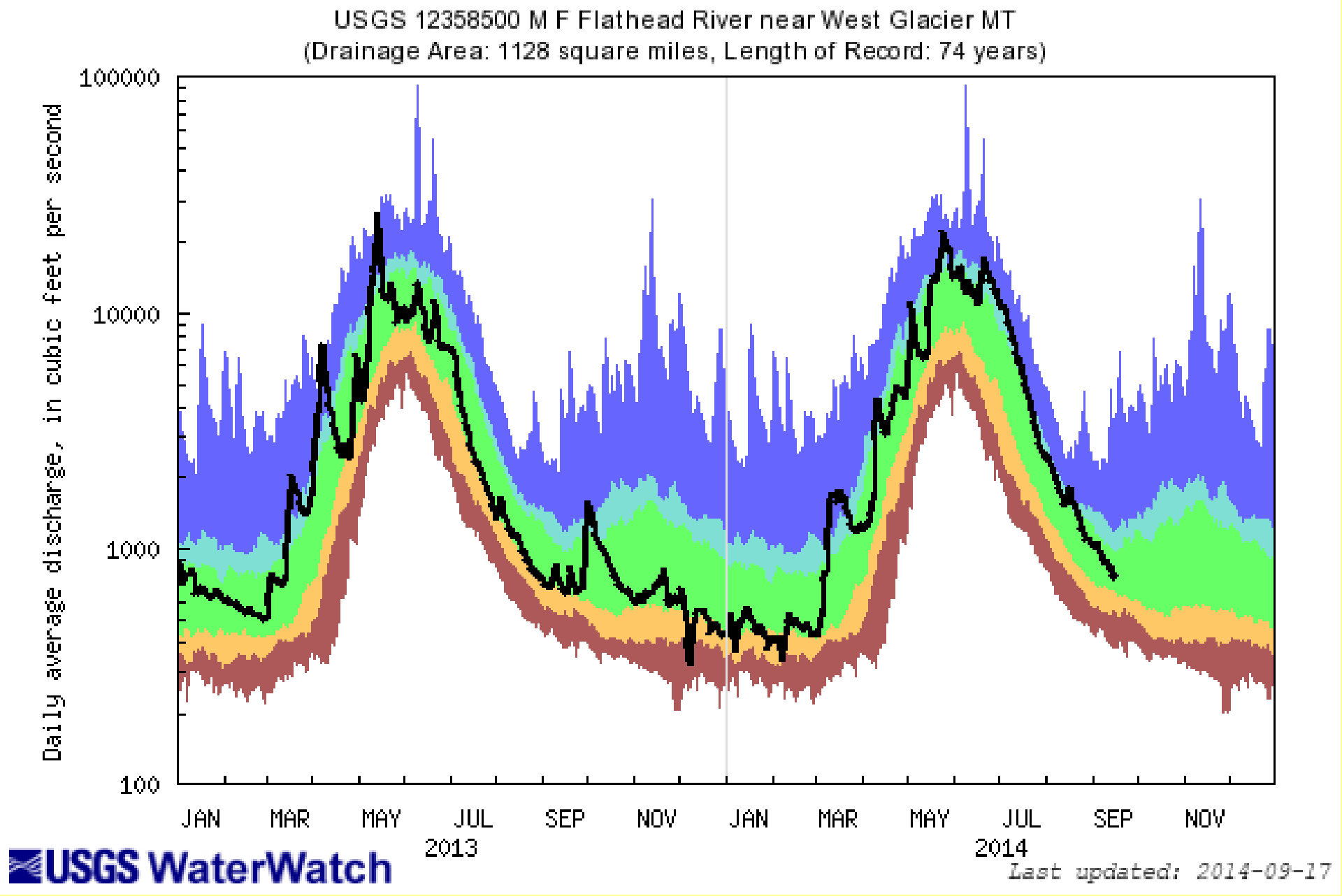

USGS 12302055 Fisher River near Libby MT
(Drainage Area: 838 square miles, Length of Record: 46 years)
Daily average discharge, in cubic feet per second
8000
1000
100
JAN
MAR
MAY
JUL
SEP
NOV
JAN
MAR
MAY
JUL
SEP
NOV
2013
2014
USGS WaterWatch
Last updated: 2014-09-17
Explanation - Percentile classes
lowest-10th percentile
10-24
25-75
76-90
90th percentile -highest
Flow
Much below normal
Below normal
Normal
Above normal
Much above normal

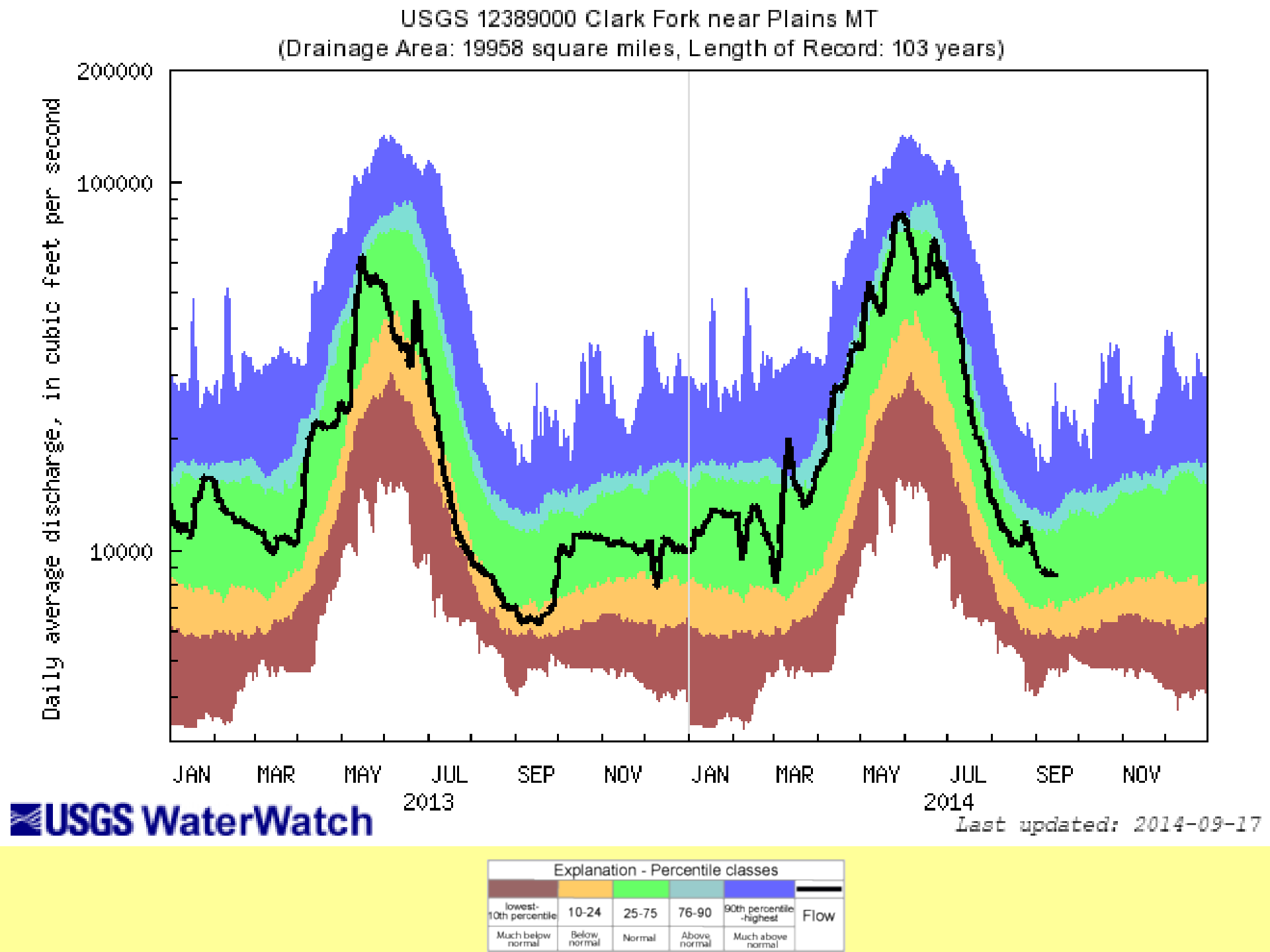

USGS 12340000 Blackfoot River near Bonner MT
(Drainage Area: 2290 square miles, Length of Record: 115 years)
Daily average discharge, in cubic feet per second
20000
10000
1000
100
JAN
MAR
MAY
JUL
SEP
NOV
2013
2014
USGS WaterWatch
Last updated: 2014-09-17
Explanation - Percentile classes
lowest-10th percentile
10-24
25-75
76-90
90th percentile -highest
Flow
Much below normal
Below normal
Normal
Above normal
Much above normal


USGS 12340500 Clark Fork above Missoula MT
(Drainage Area: 5999 square miles, Length of Record: 84 years)
Daily average discharge, in cubic feet per second
40000
10000
1000
JAN
MAR
MAY
JUL
SEP
NOV
2013
2014
USGS WaterWatch
Last updated: 2014-09-17
Explanation - Percentile classes
lowest-10th percentile
10-24
25-75
76-90
90th percentile -highest
Flow
Much below normal
Below normal
Normal
Above normal
Much above normal


USGS 12344000 Bitterroot River near Darby MT
(Drainage Area: 1049 square miles, Length of Record: 76 years)
Daily average discharge, in cubic feet per second
20000
10000
1000
100
JAN
MAR
MAY
JUL
SEP
NOV
2013
2014
USGS WaterWatch
Last updated: 2014-09-17
Explanation - Percentile classes
lowest-10th percentile
10-24
25-75
76-90
90th percentile-highest
Flow
Much below normal
Below normal
Normal
Above normal
Much above normal


USGS 12354500 Clark Fork at St. Regis MT
(Drainage Area: 10709 square miles, Length of Record: 84 years)
Daily average discharge, in cubic feet per second
70000
10000
1000
JAN
MAR
MAY
JUL
SEP
NOV
JAN
MAR
MAY
JUL
SEP
NOV
2013
2014
USGS WaterWatch
Last updated: 2014-09-17
Explanation - Percentile classes
lowest-10th percentile
10-24
25-75
76-90
90th percentile -highest
Flow
Much below normal
Below normal
Normal
Above normal
Much above normal


USGS 12358500 M F Flathead River near West Glacier MT
(Drainage Area: 1128 square miles, Length of Record: 74 years)
Daily average discharge, in cubic feet per second
100000
10000
1000
100
JAN
MAR
MAY
JUL
SEP
NOV
JAN
MAR
MAY
JUL
SEP
NOV
2013
2014
USGS WaterWatch
Last updated: 2014-09-17
Explanation - Percentile classes
lowest-10th percentile
10-24
25-75
76-90
90th percentile -highest
Flow
Much below normal
Below normal
Normal
Above normal
Much above normal


USGS 12389000 Clark Fork near Plains MT
(Drainage Area: 19958 square miles, Length of Record: 103 years)
Daily average discharge, in cubic feet per second
200000
100000
10000
JAN
MAR
MAY
JUL
SEP
NOV
JAN
MAR
MAY
JUL
SEP
NOV
2013
2014
USGS WaterWatch
Last updated: 2014-09-17
Explanation - Percentile classes
lowest-10th percentile
10-24
25-75
76-90
90th percentile -highest
Flow
Much below normal
Below normal
Normal
Above normal
Much above normal

USGS Home Page: http://usgs.gov

NwisWeb: http://water.usgs.gov/mt/nwis
Access to streamflow (realtime and historical), water quality, and ground water information.

Montana District Home Page: http://mt.usgs.gov
Montana Current Streamflow Conditions